APPENDIX A BIOLOGICAL TECHNICAL ASSESSMENT REPORT

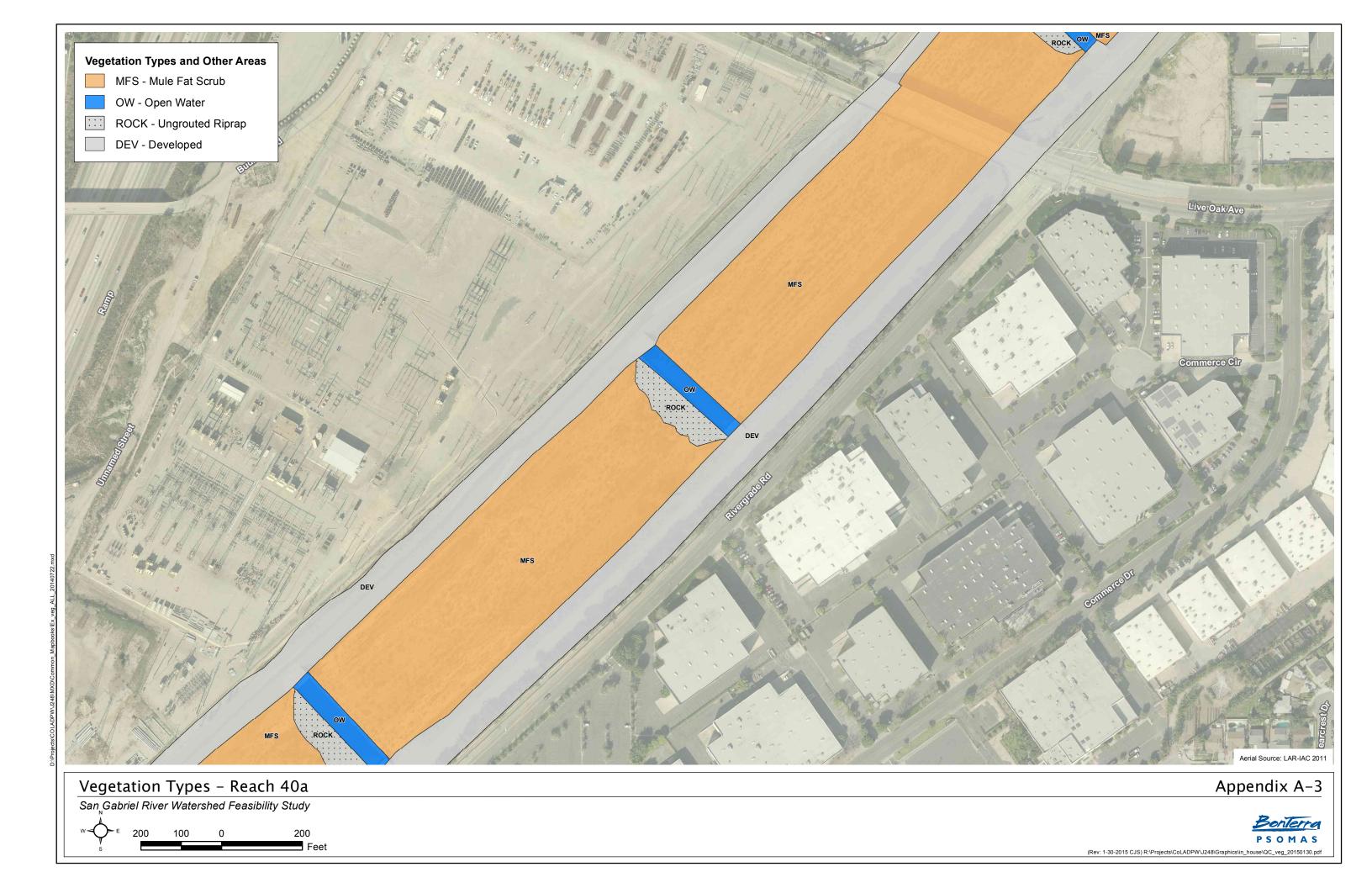
SOFT-BOTTOM CHANNEL MAPS OF VEGETATION TYPES







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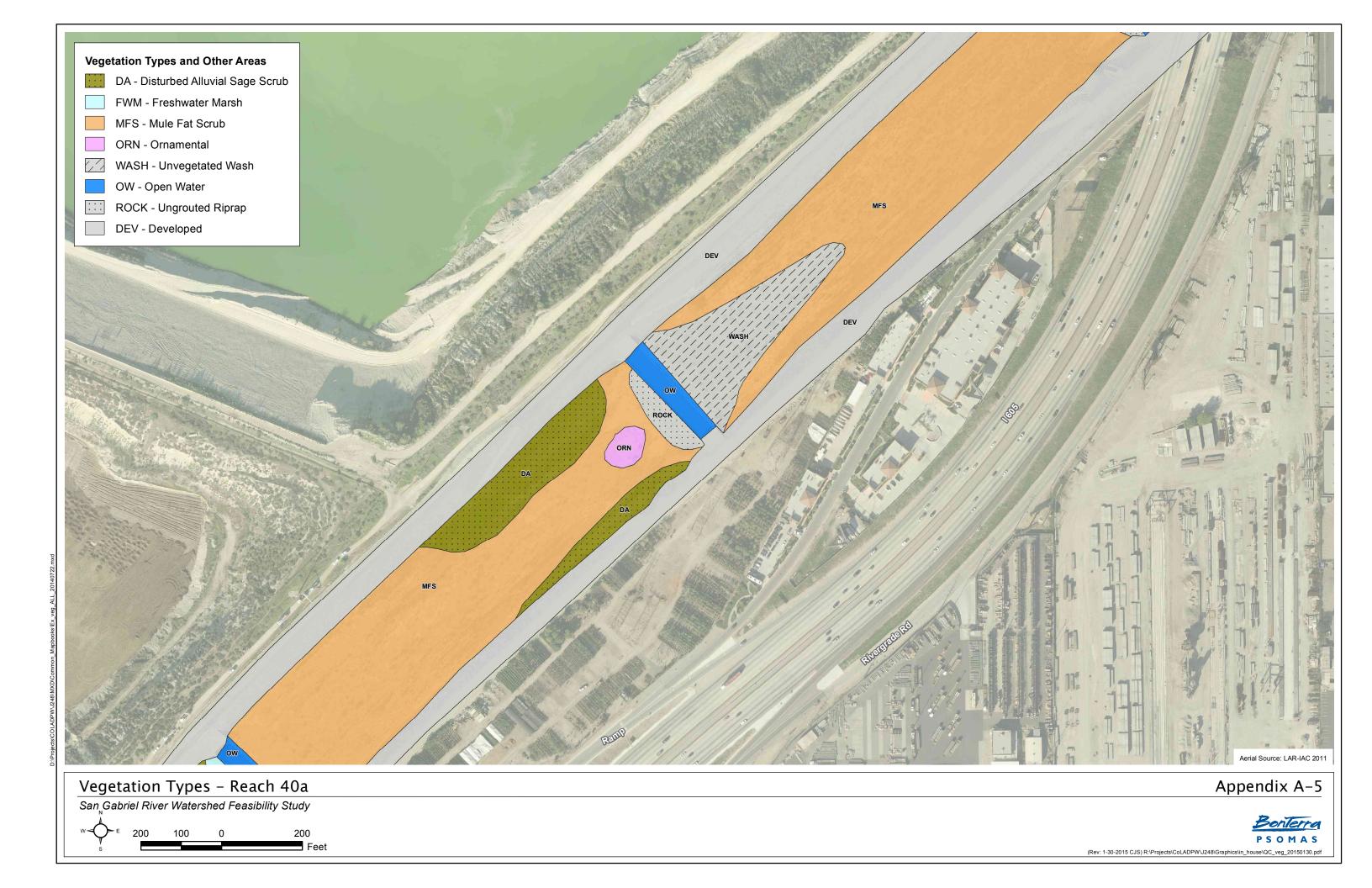


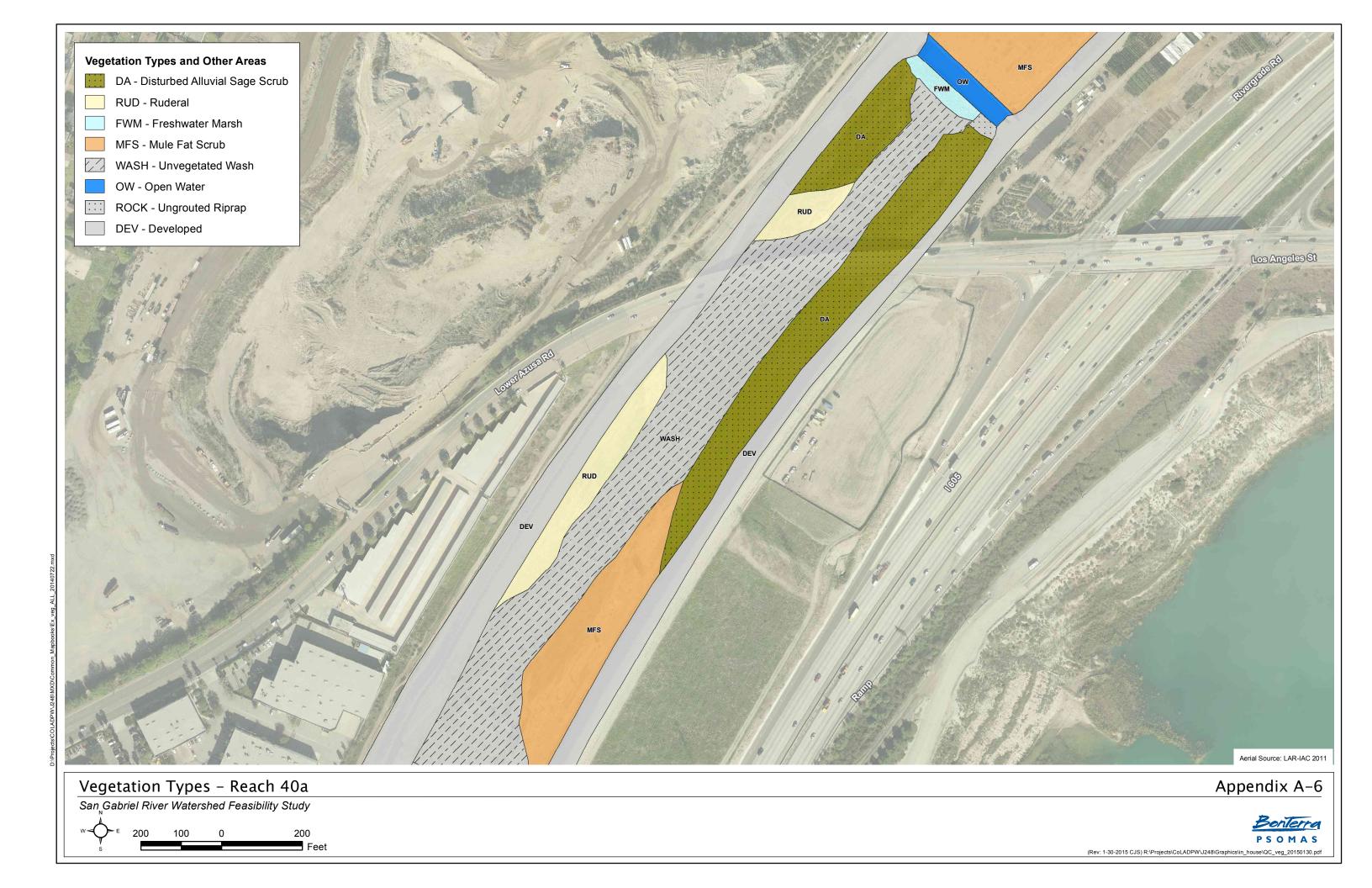


San Gabriel River Watershed Feasibility Study

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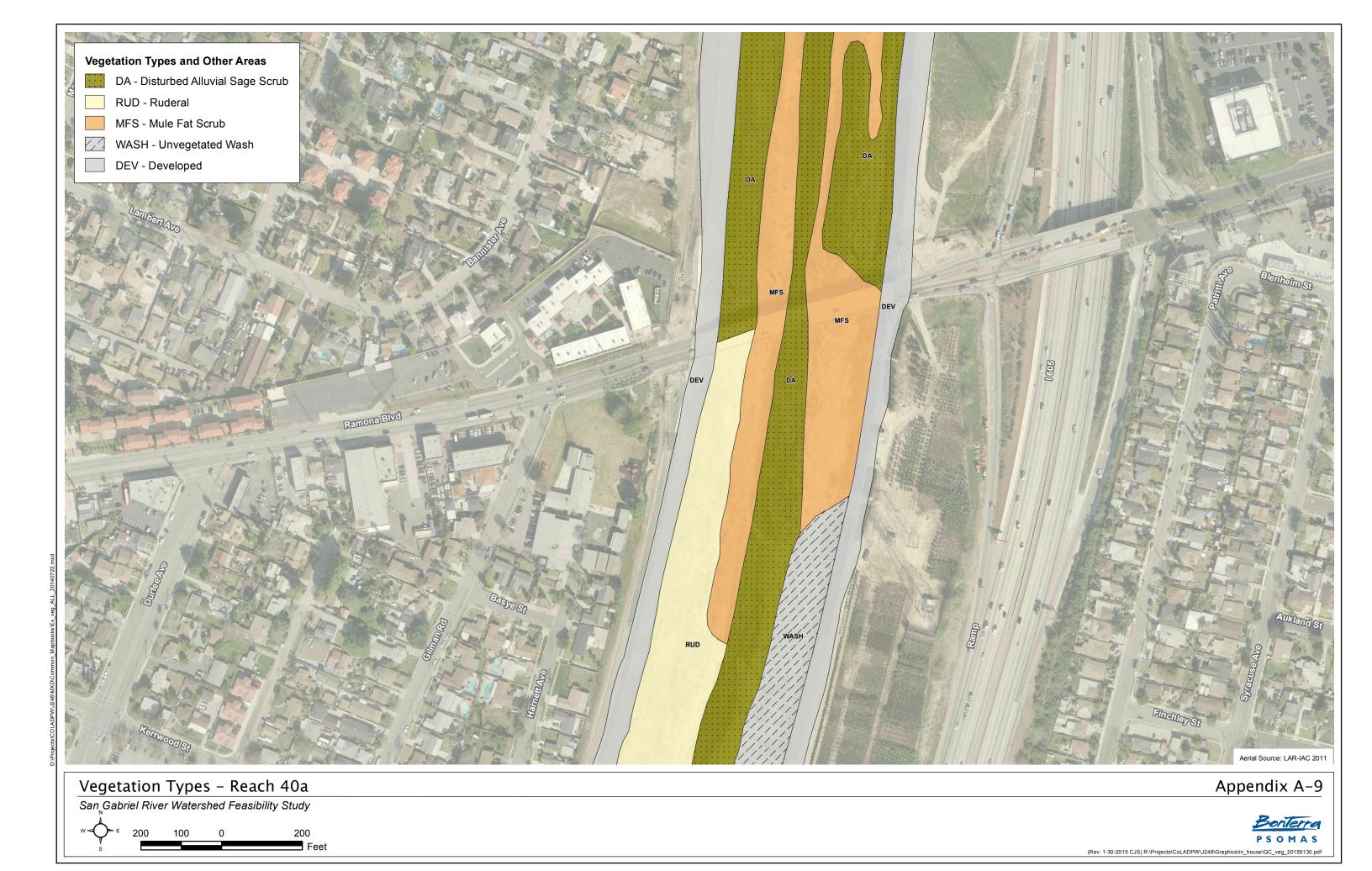
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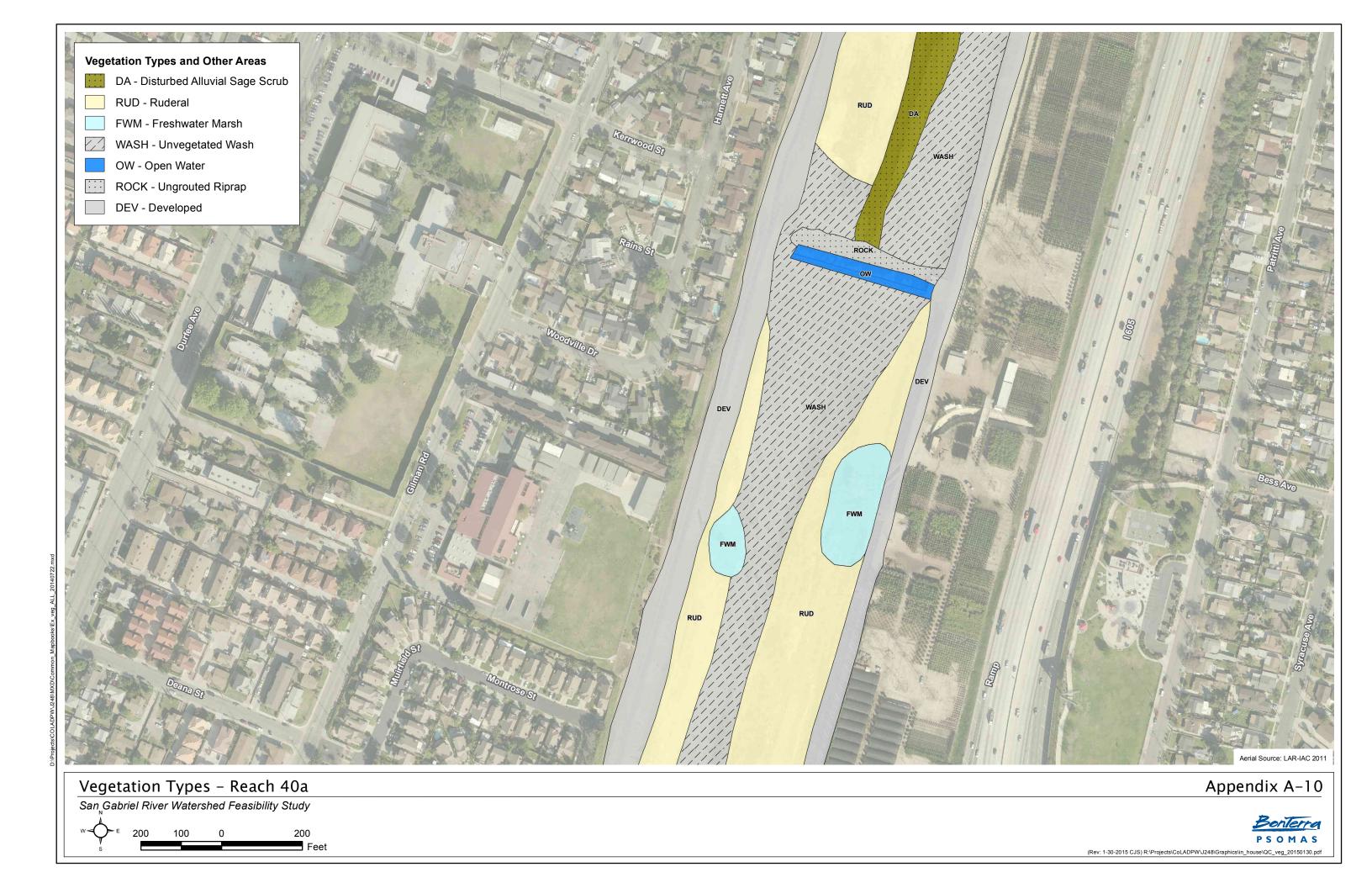
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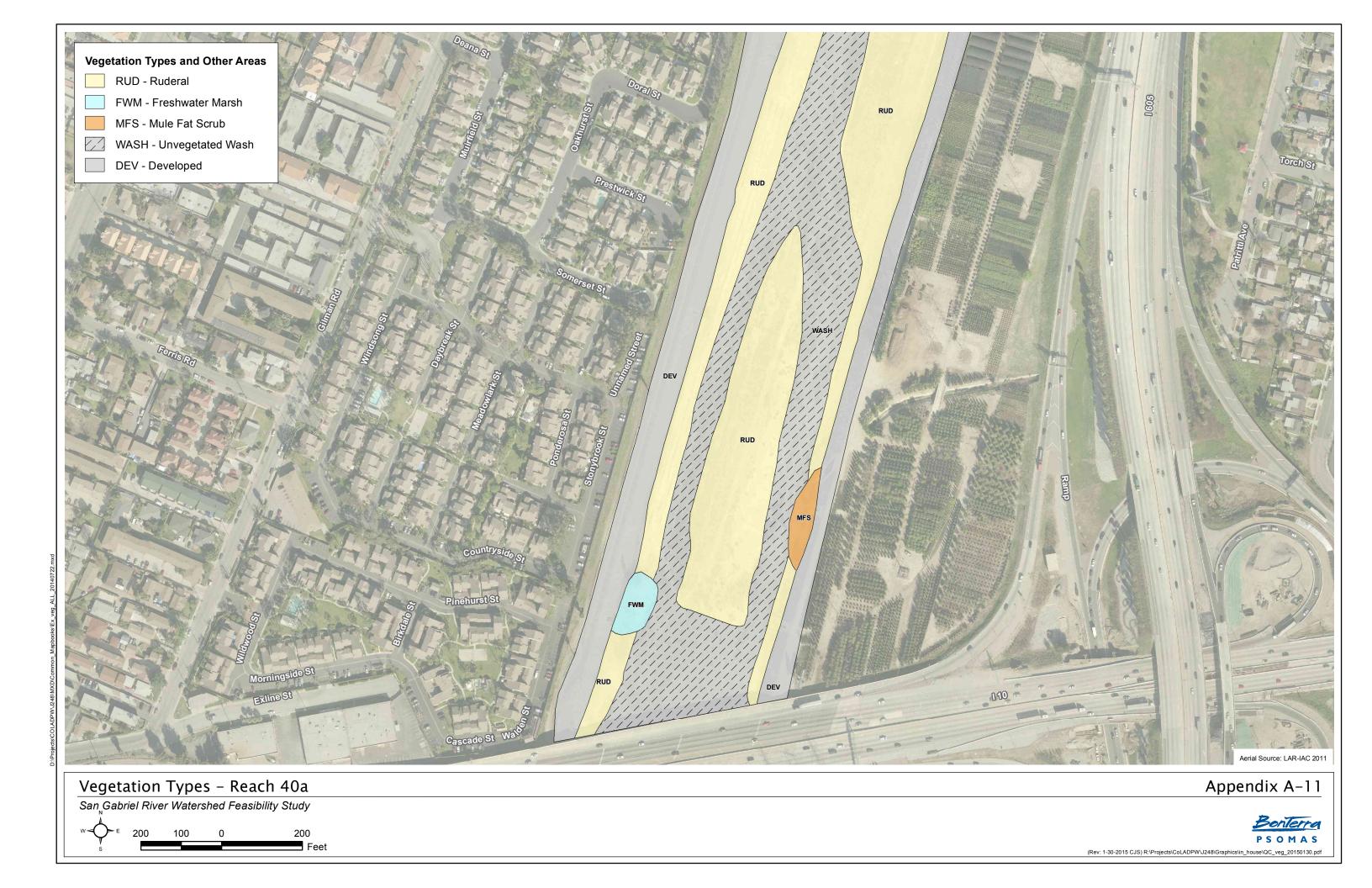
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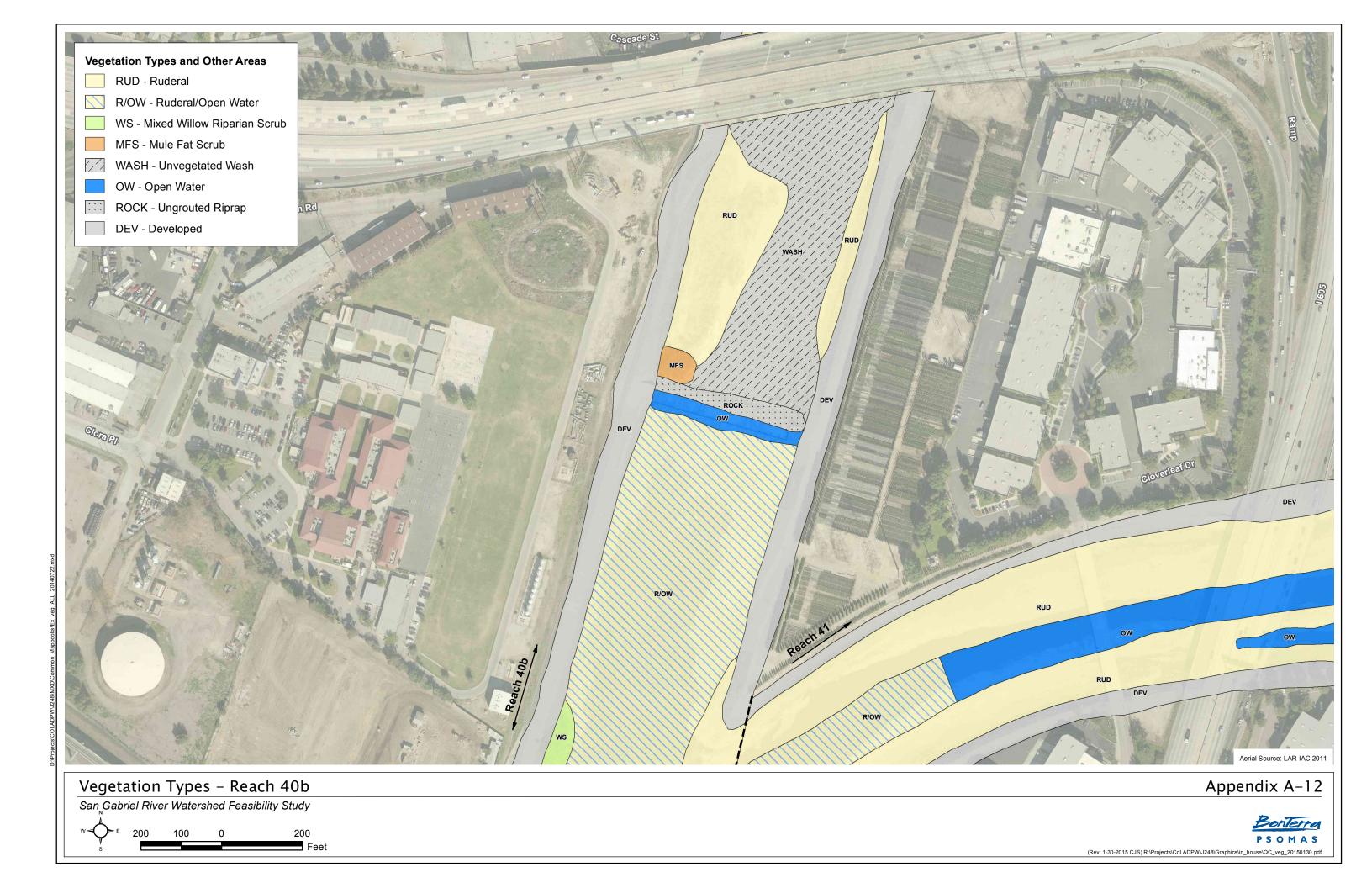


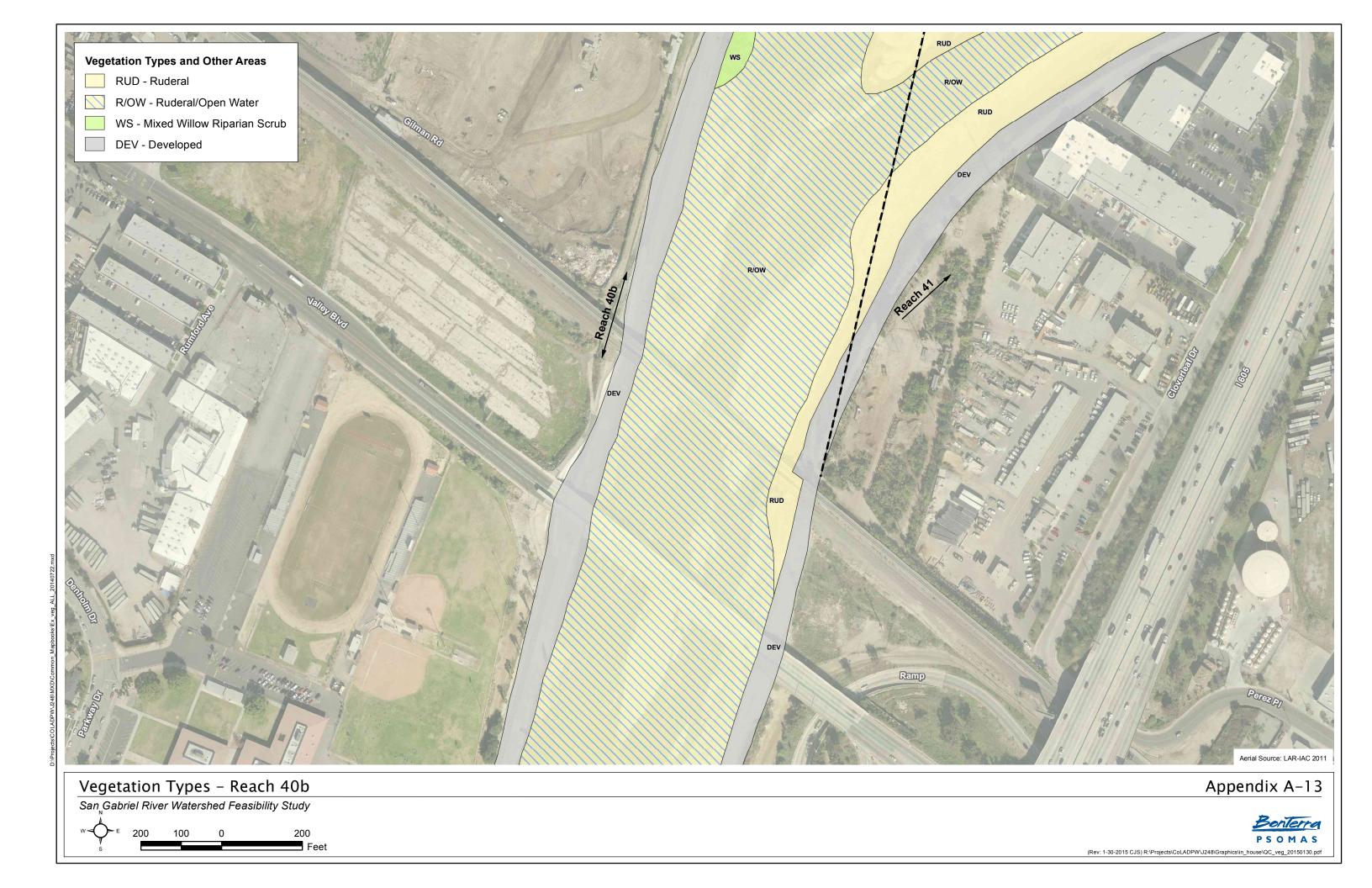
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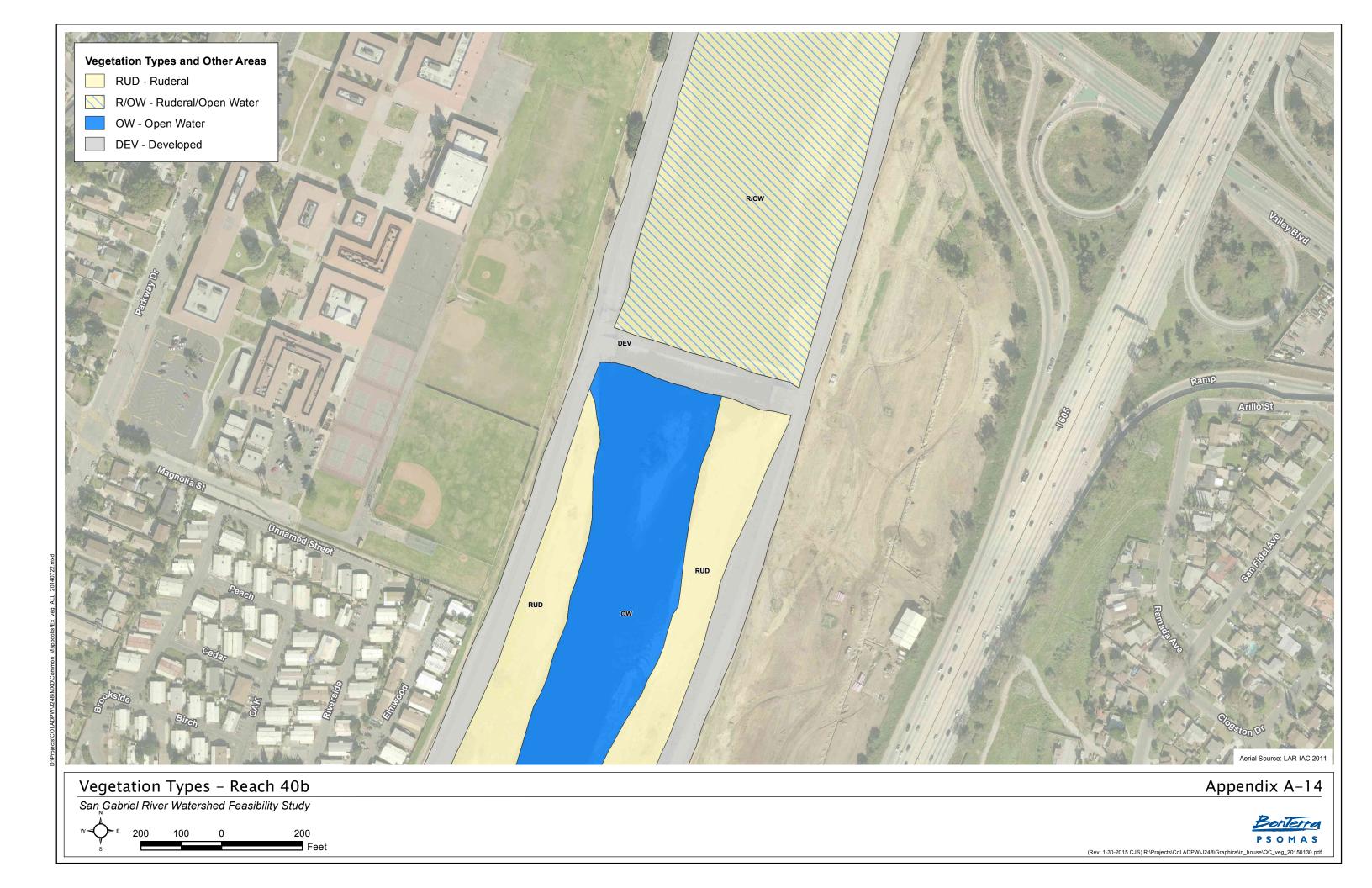


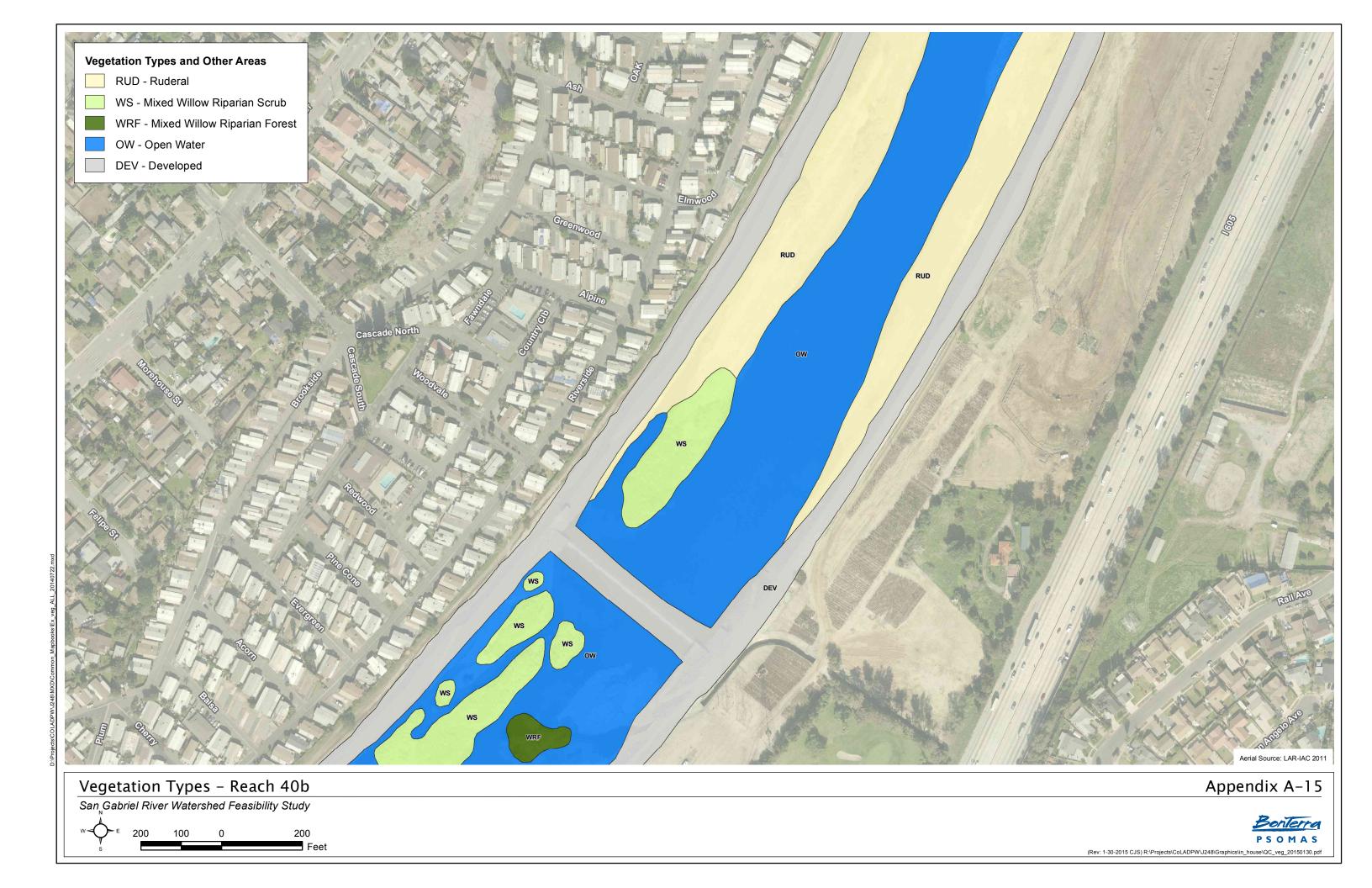


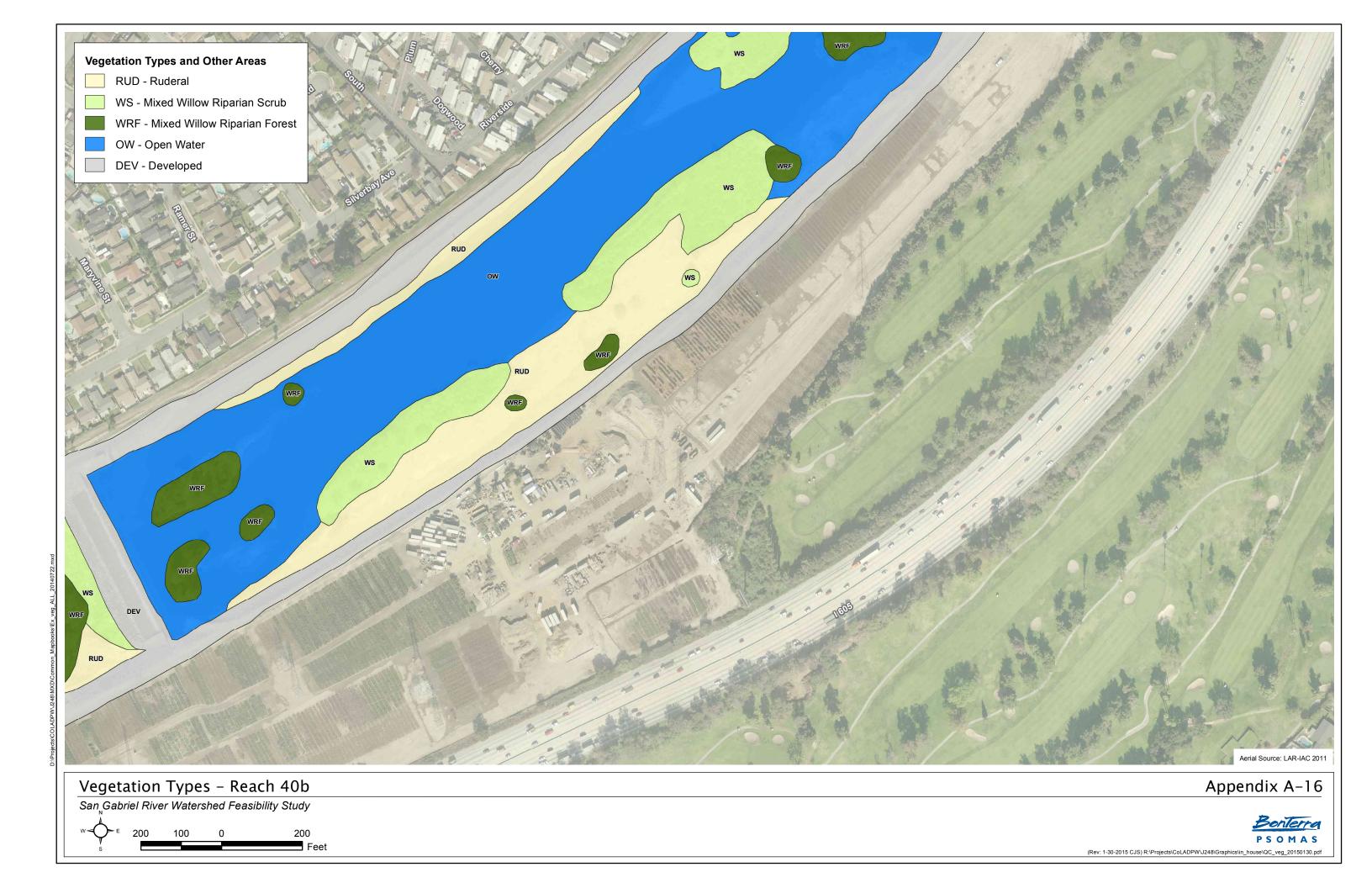


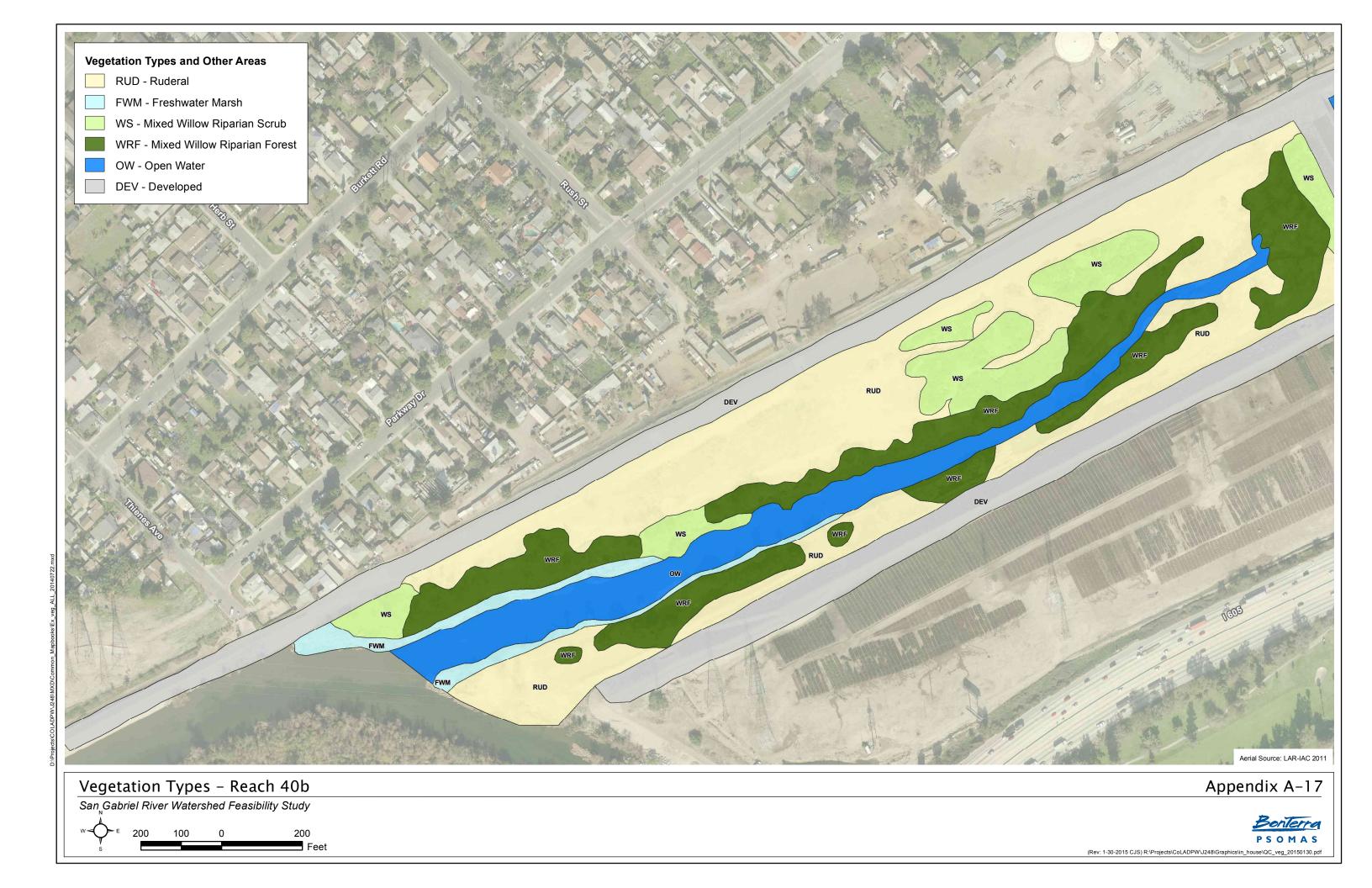


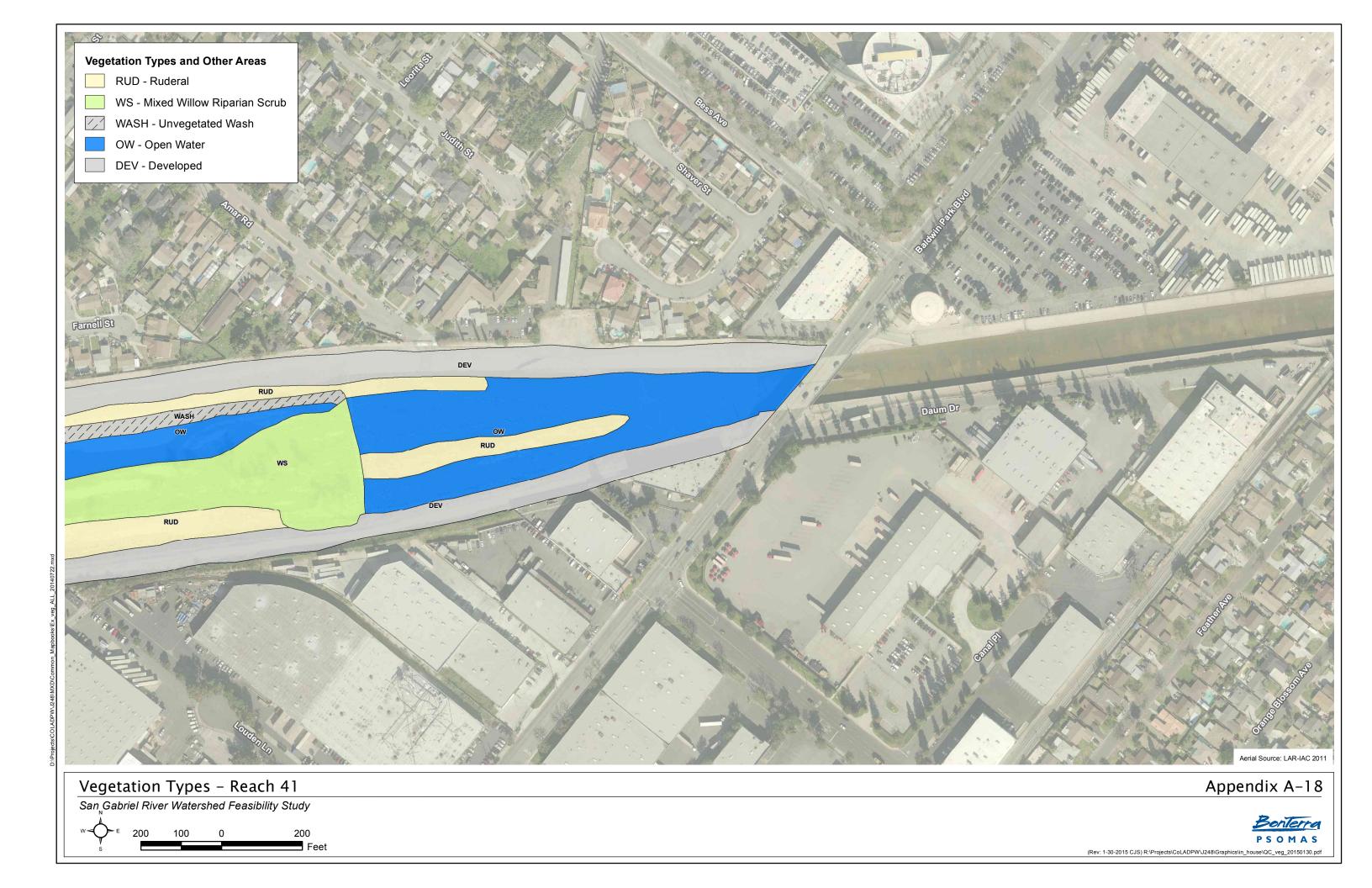


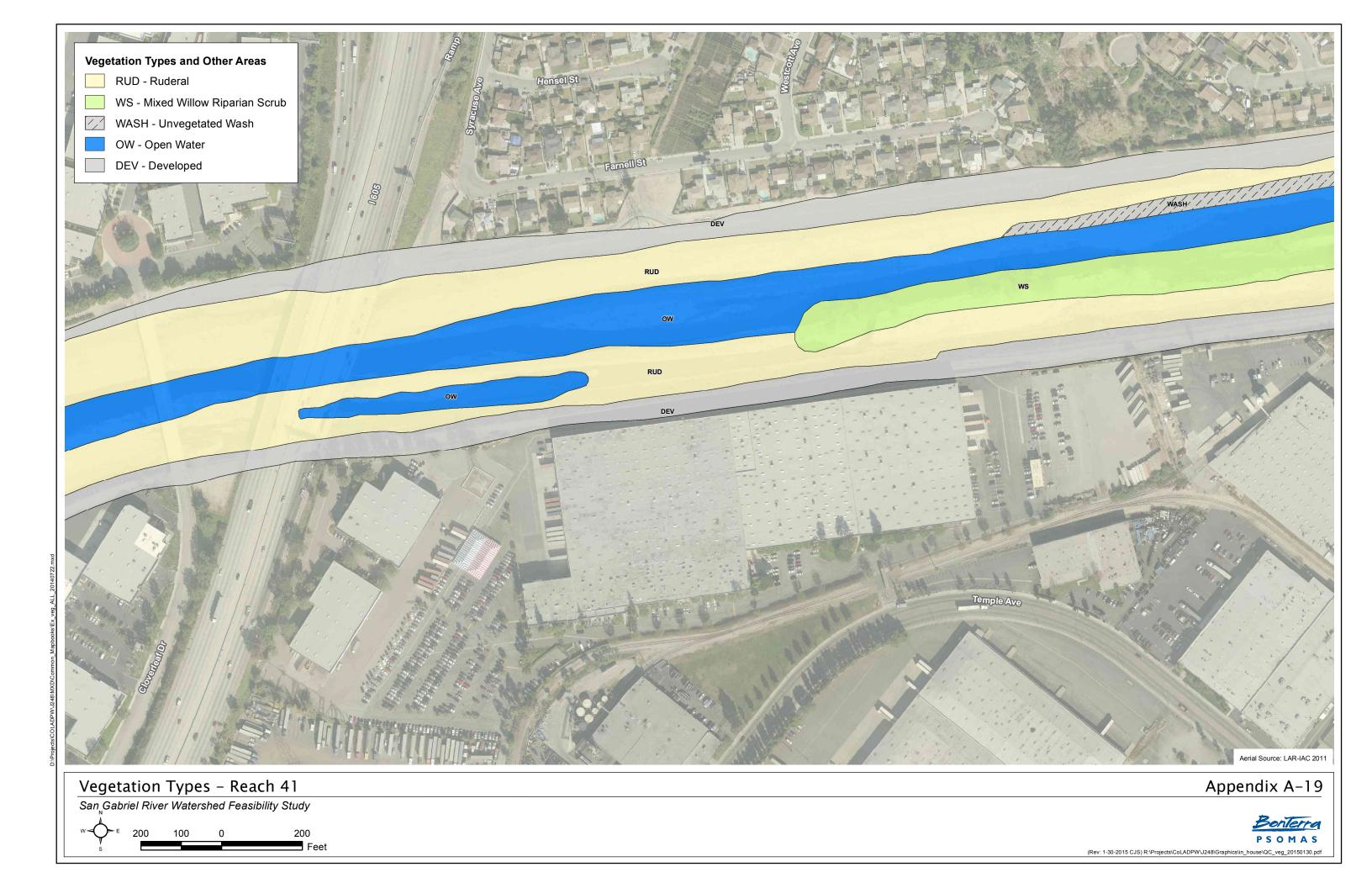


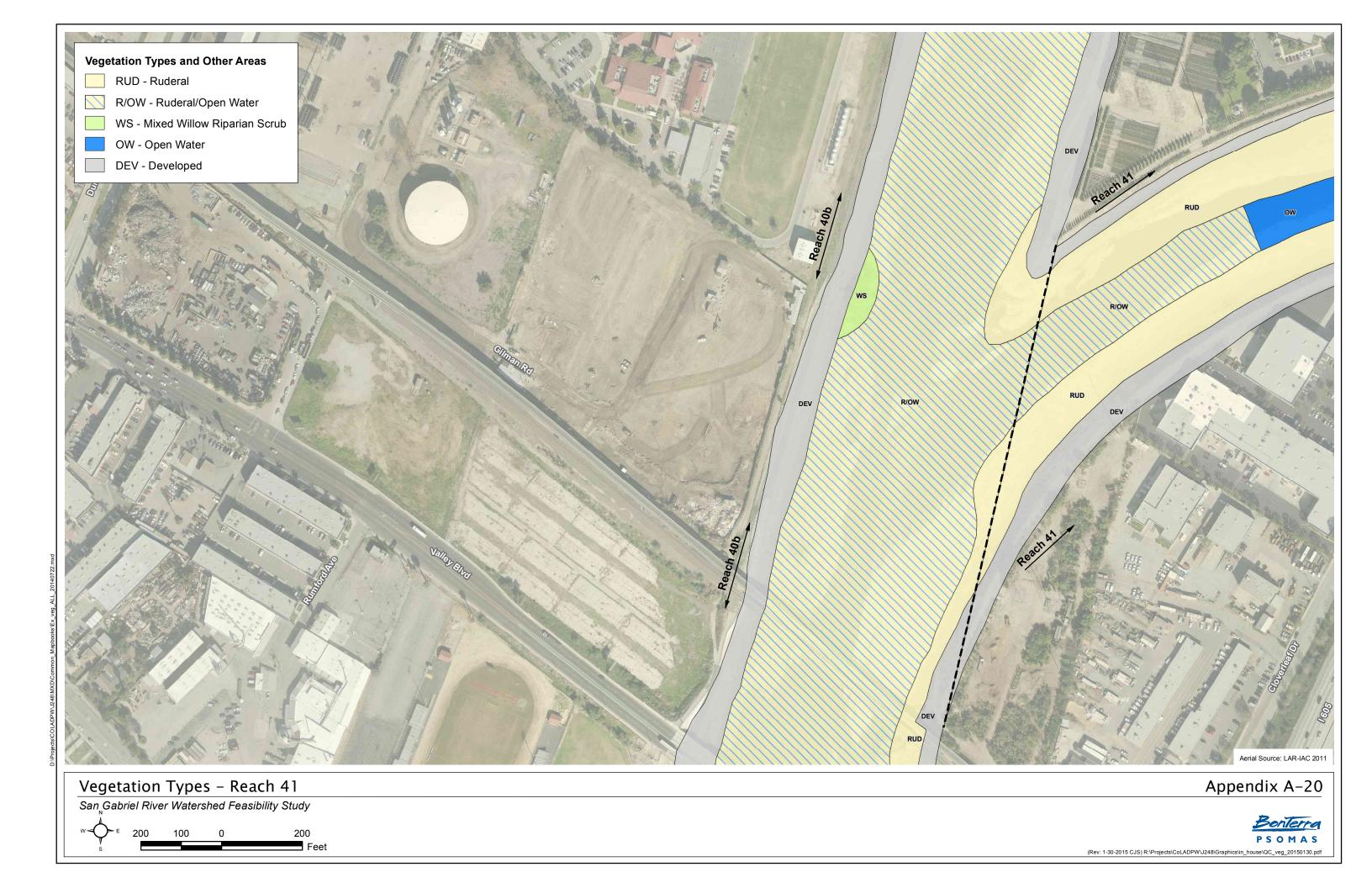


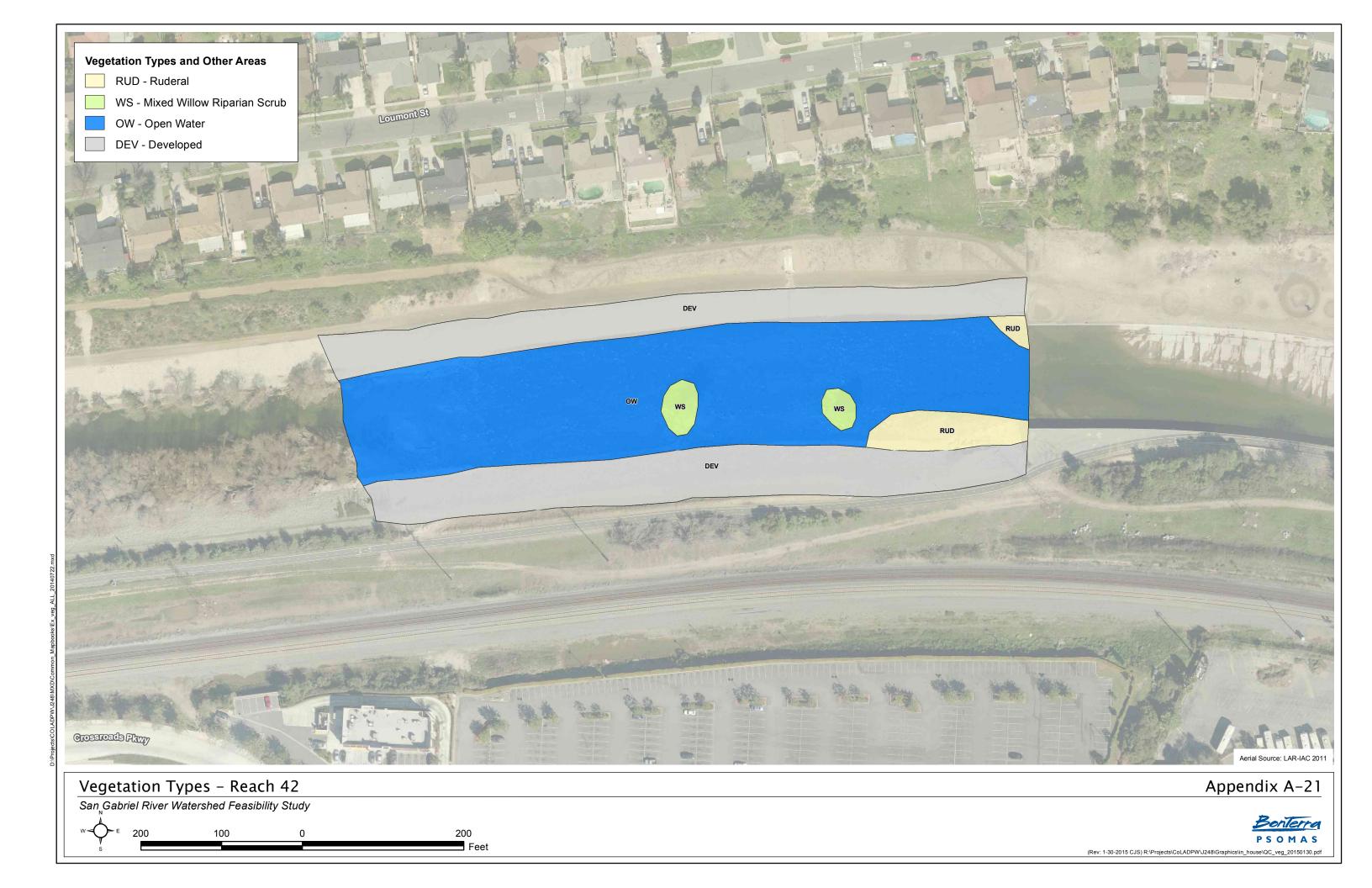




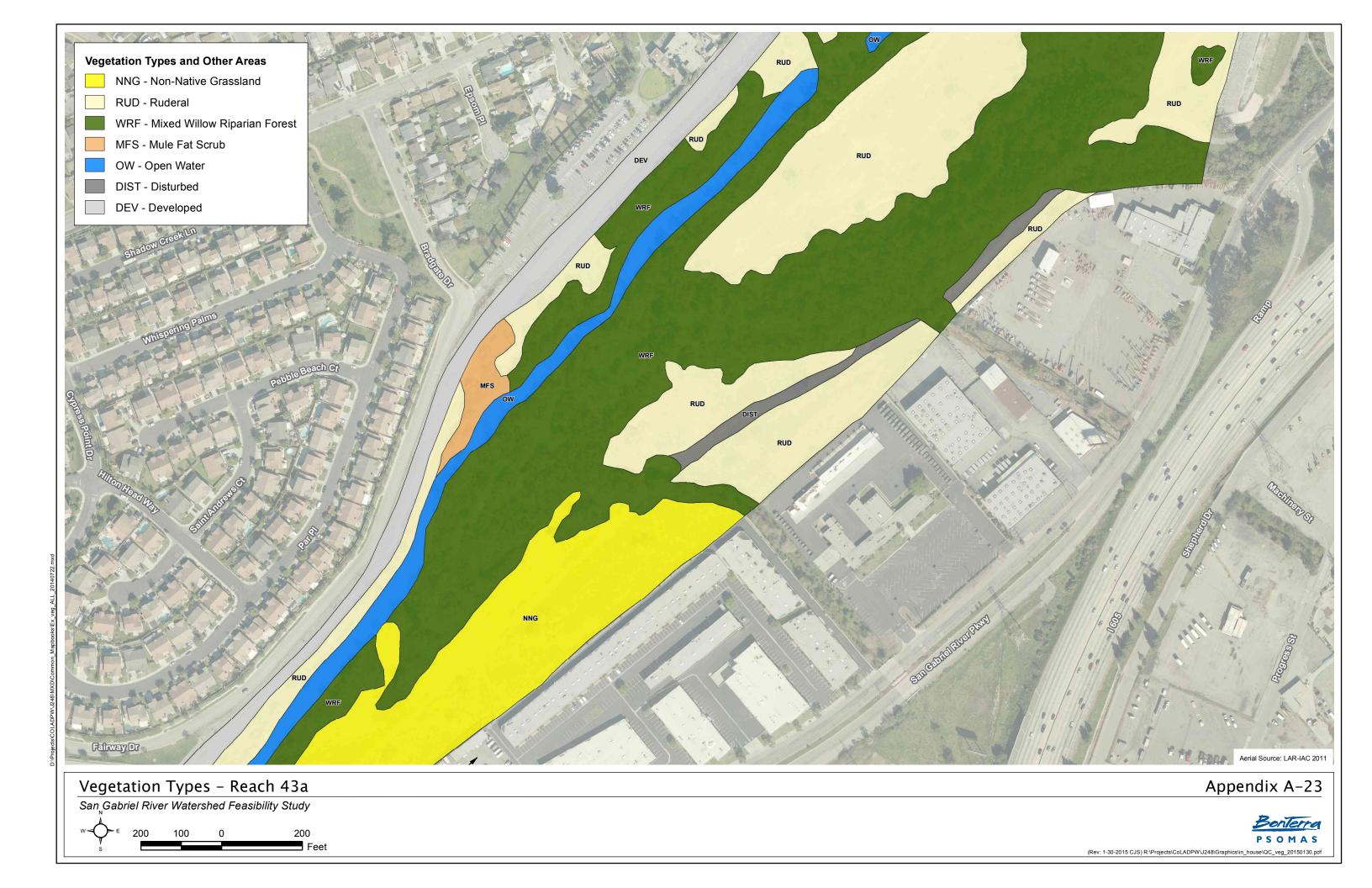


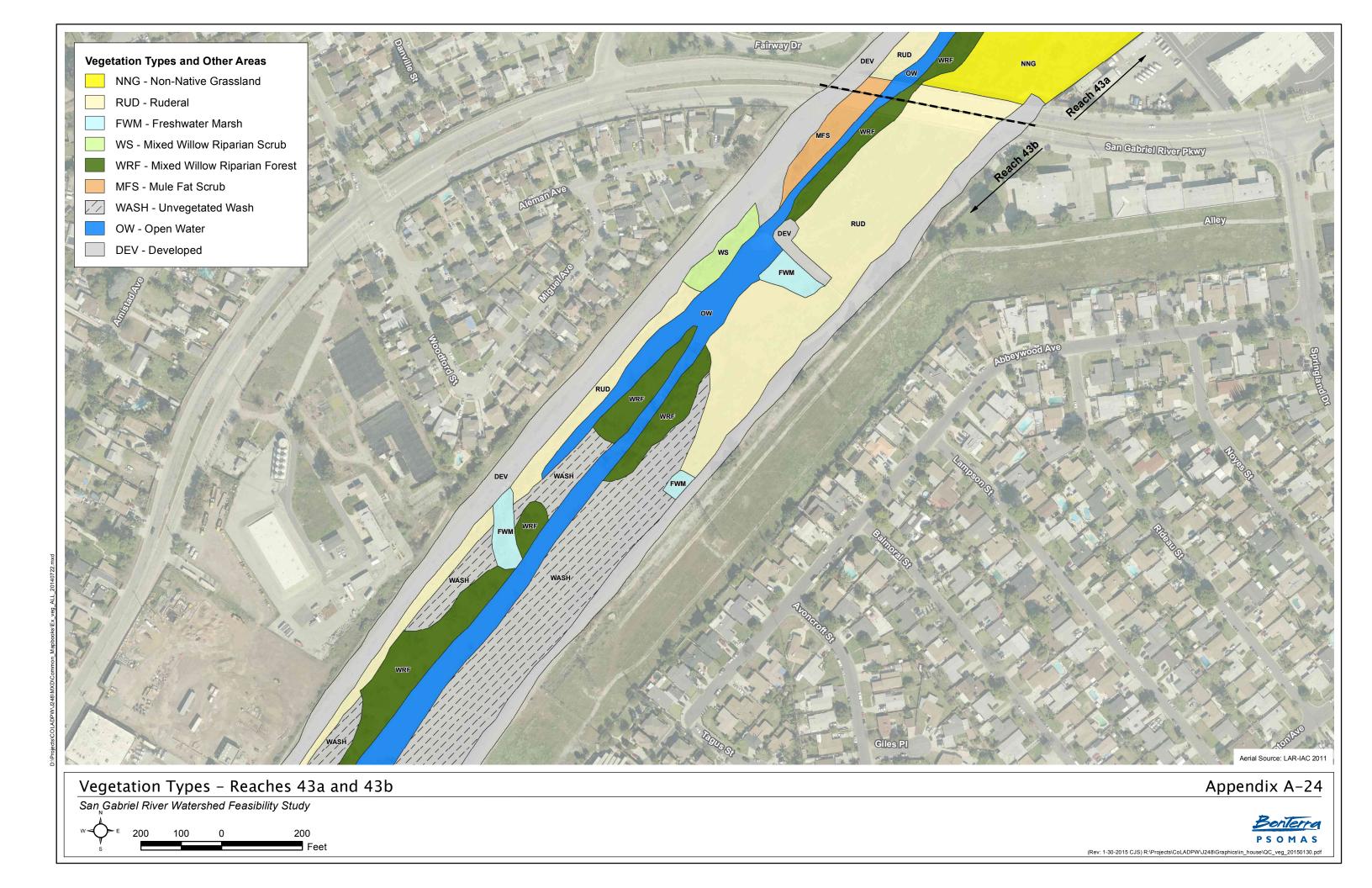


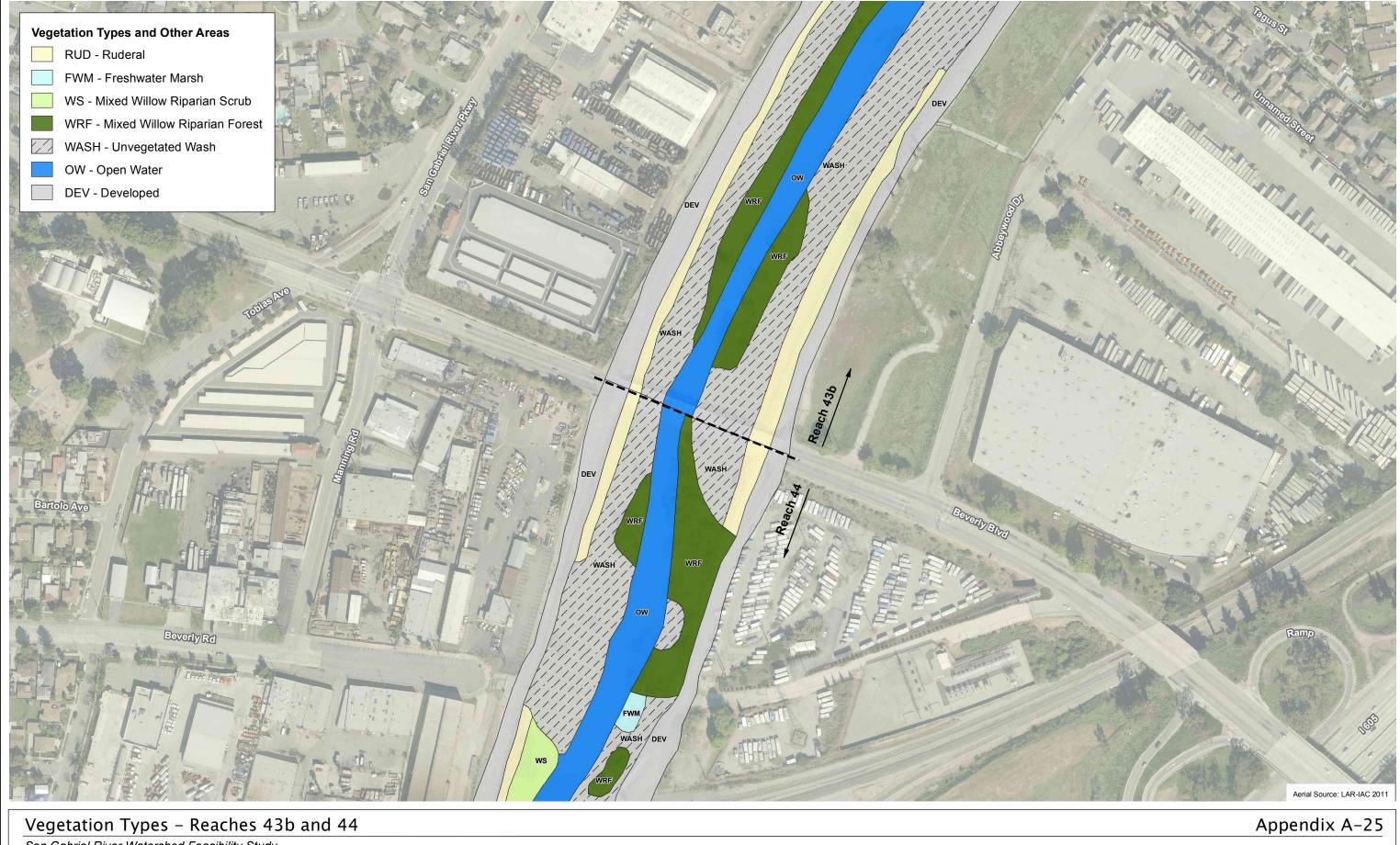










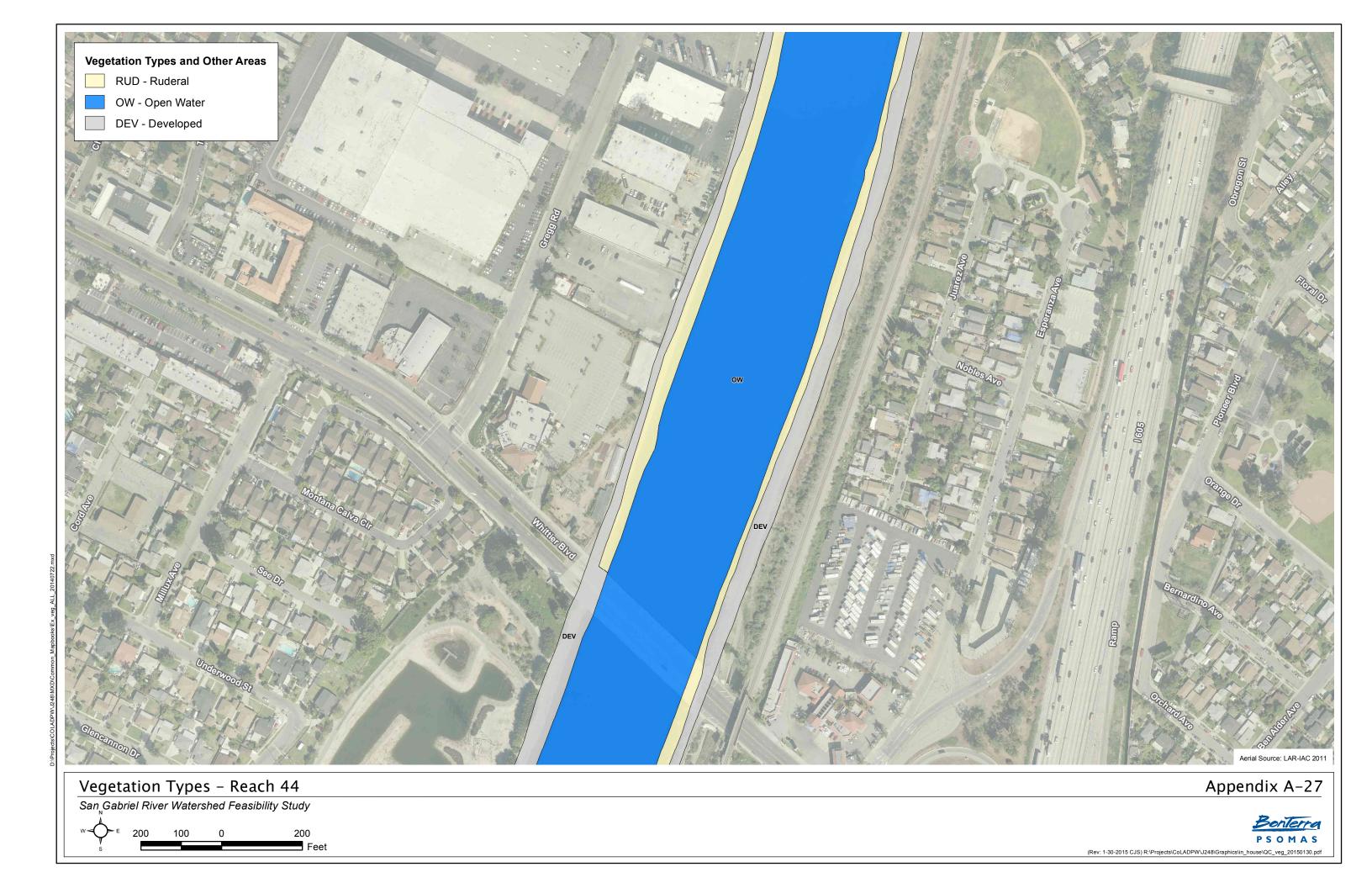


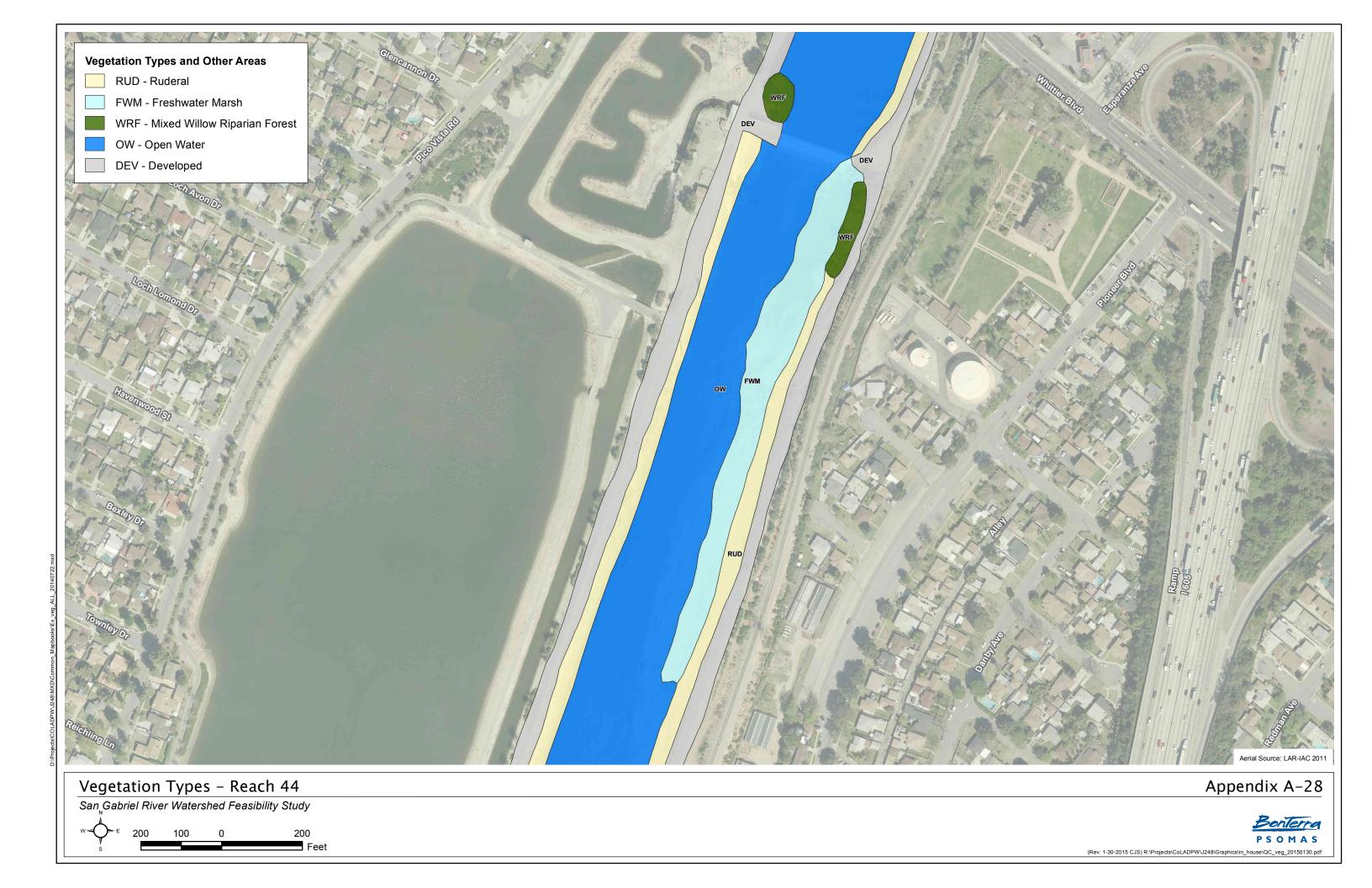
San Gabriel River Watershed Feasibility Study

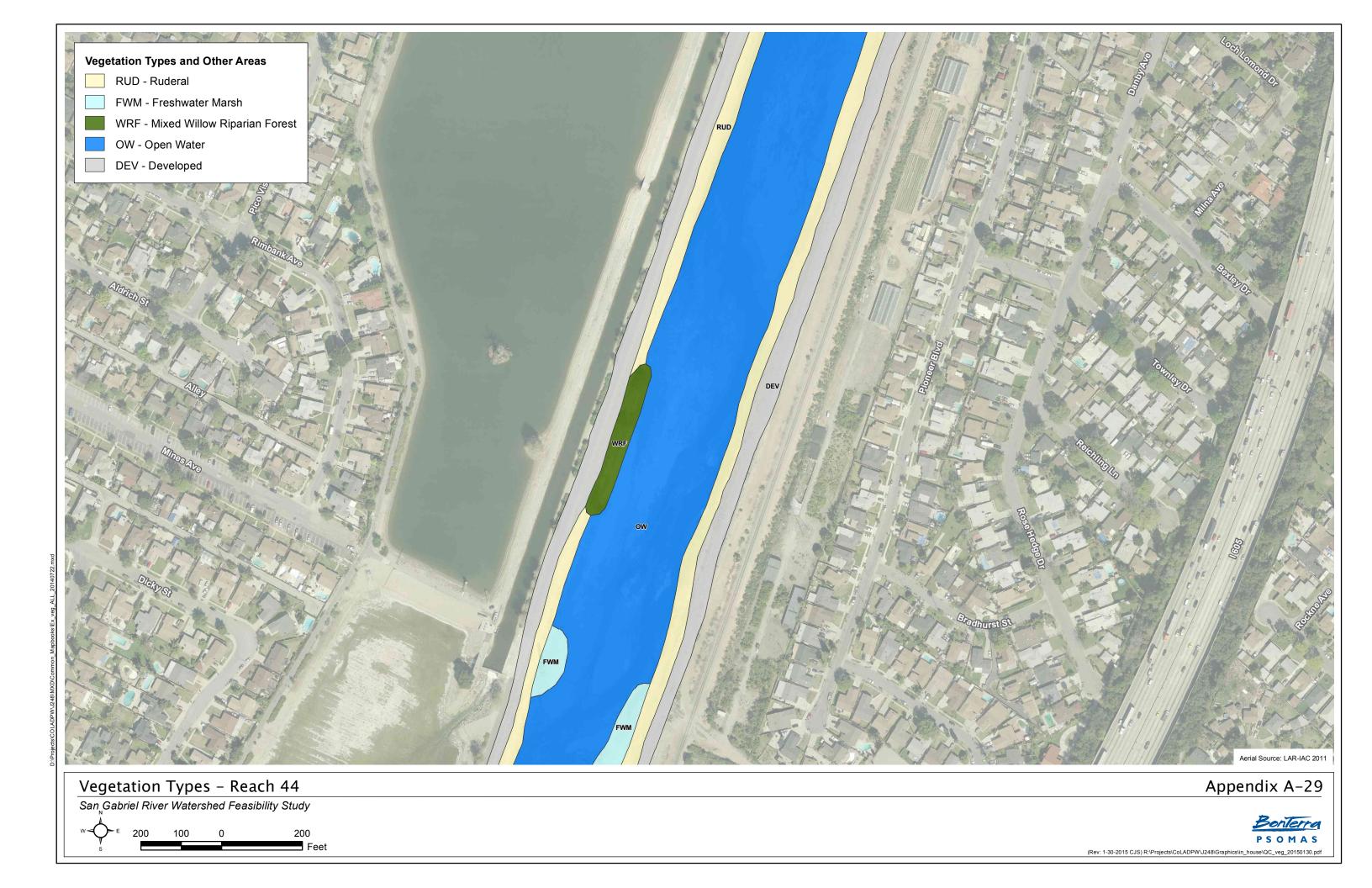
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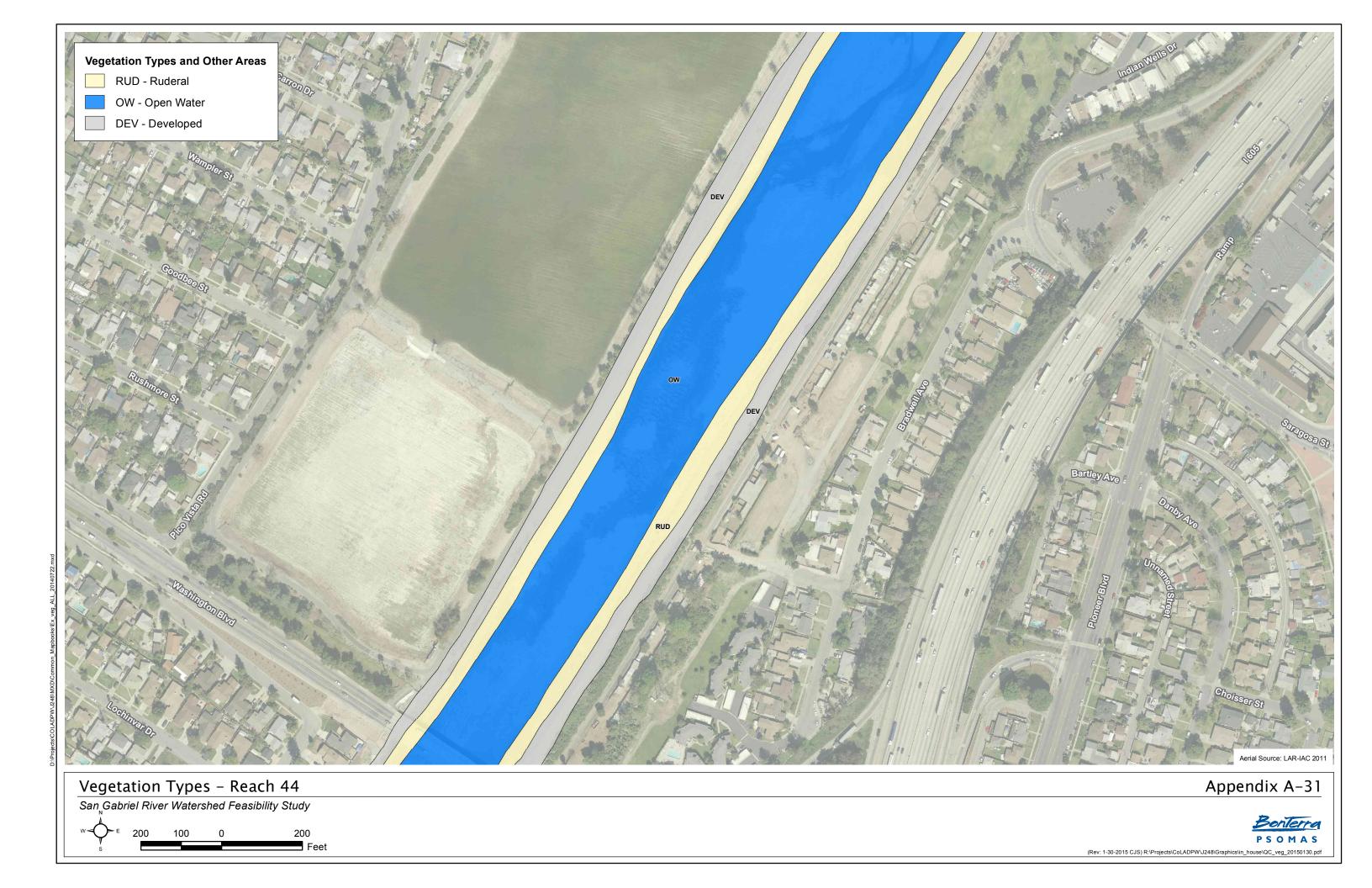




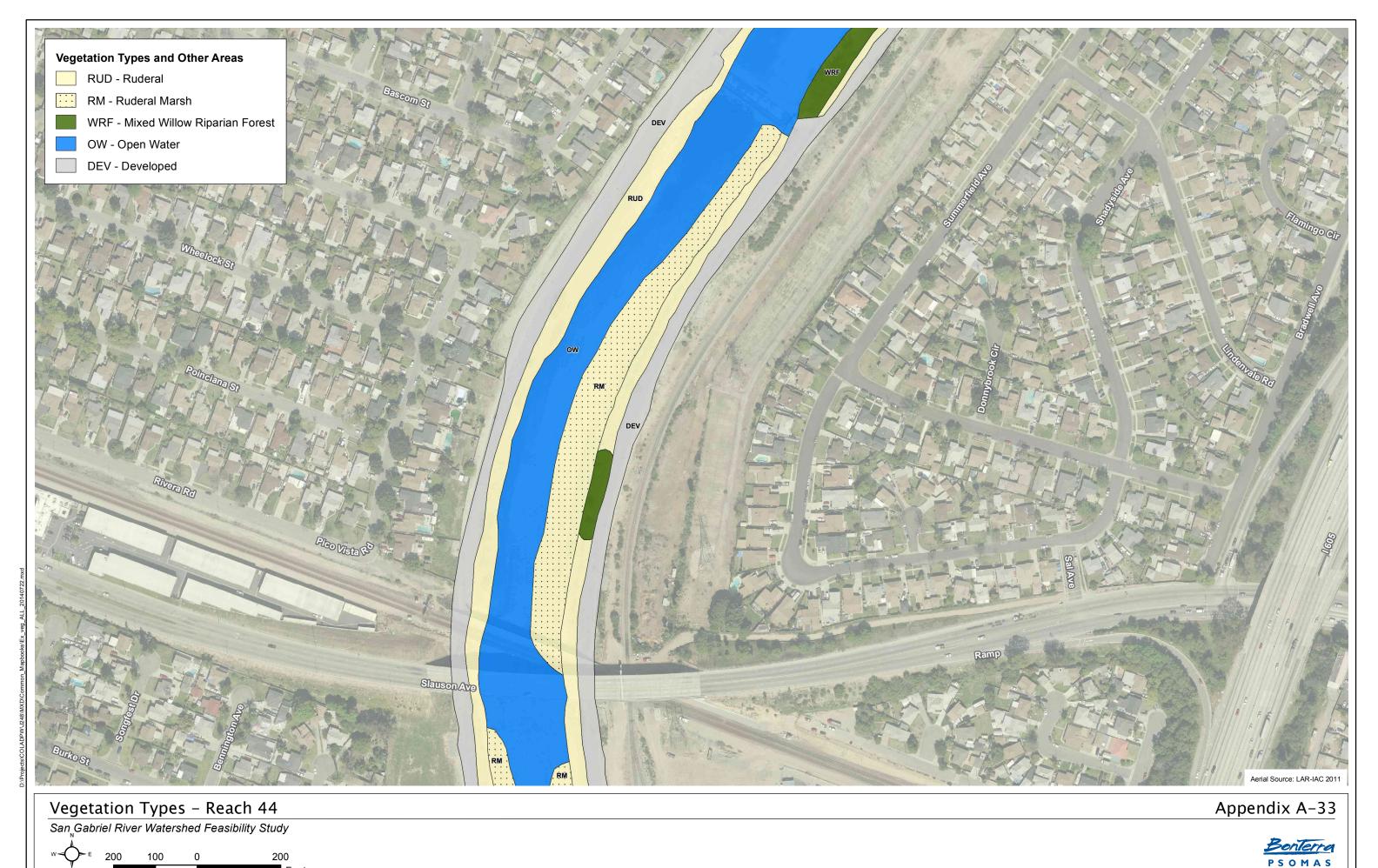




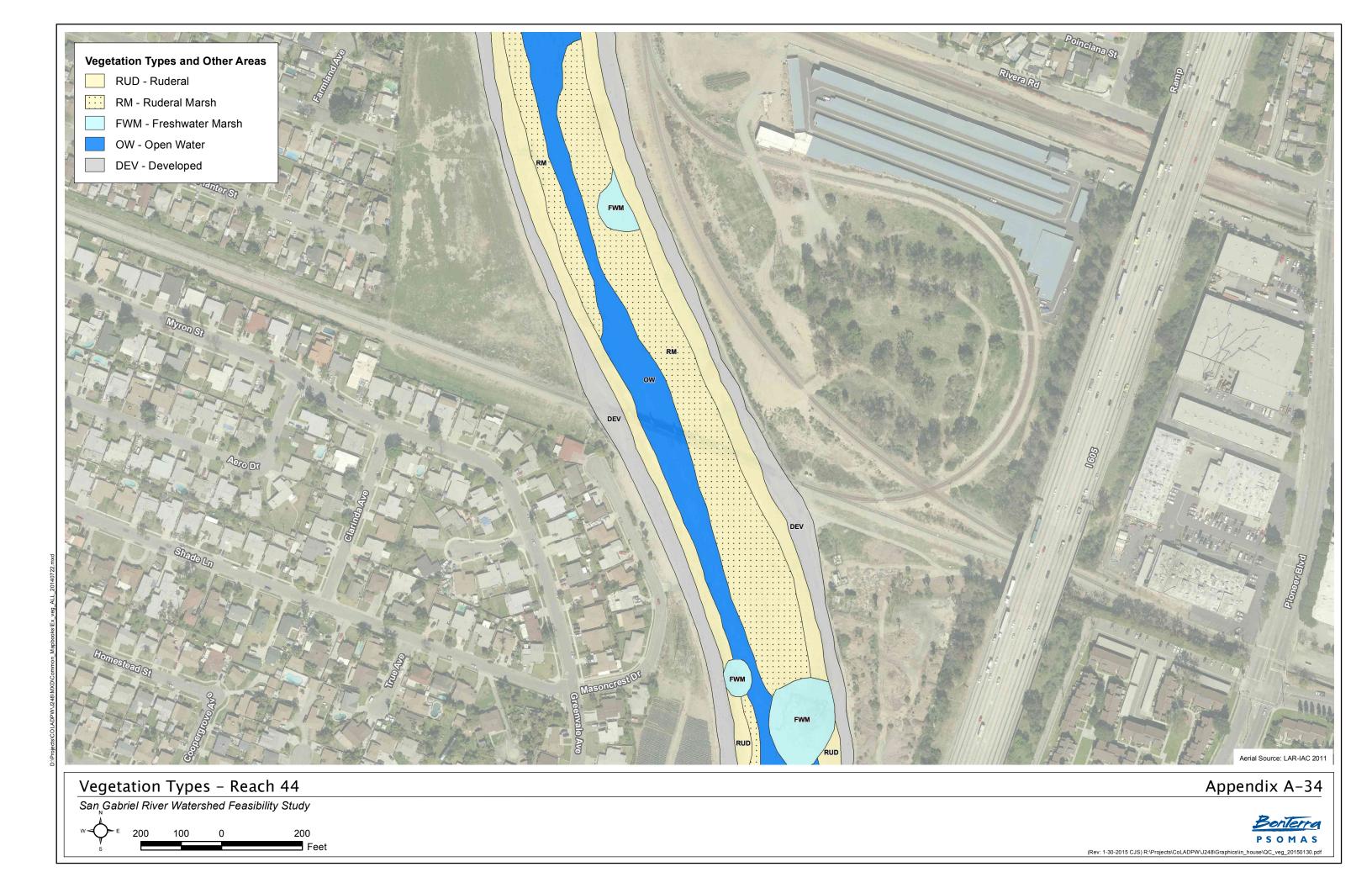


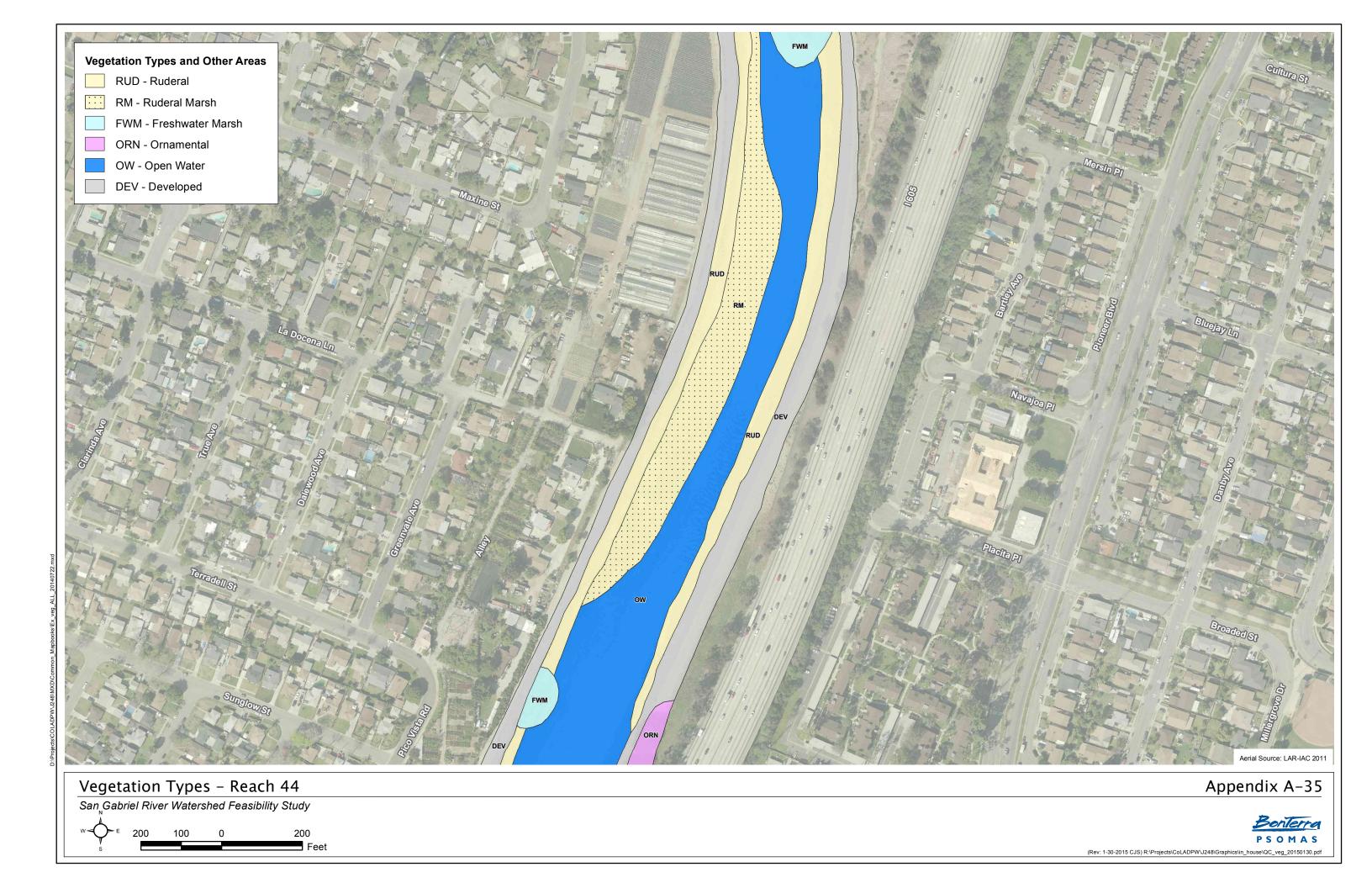


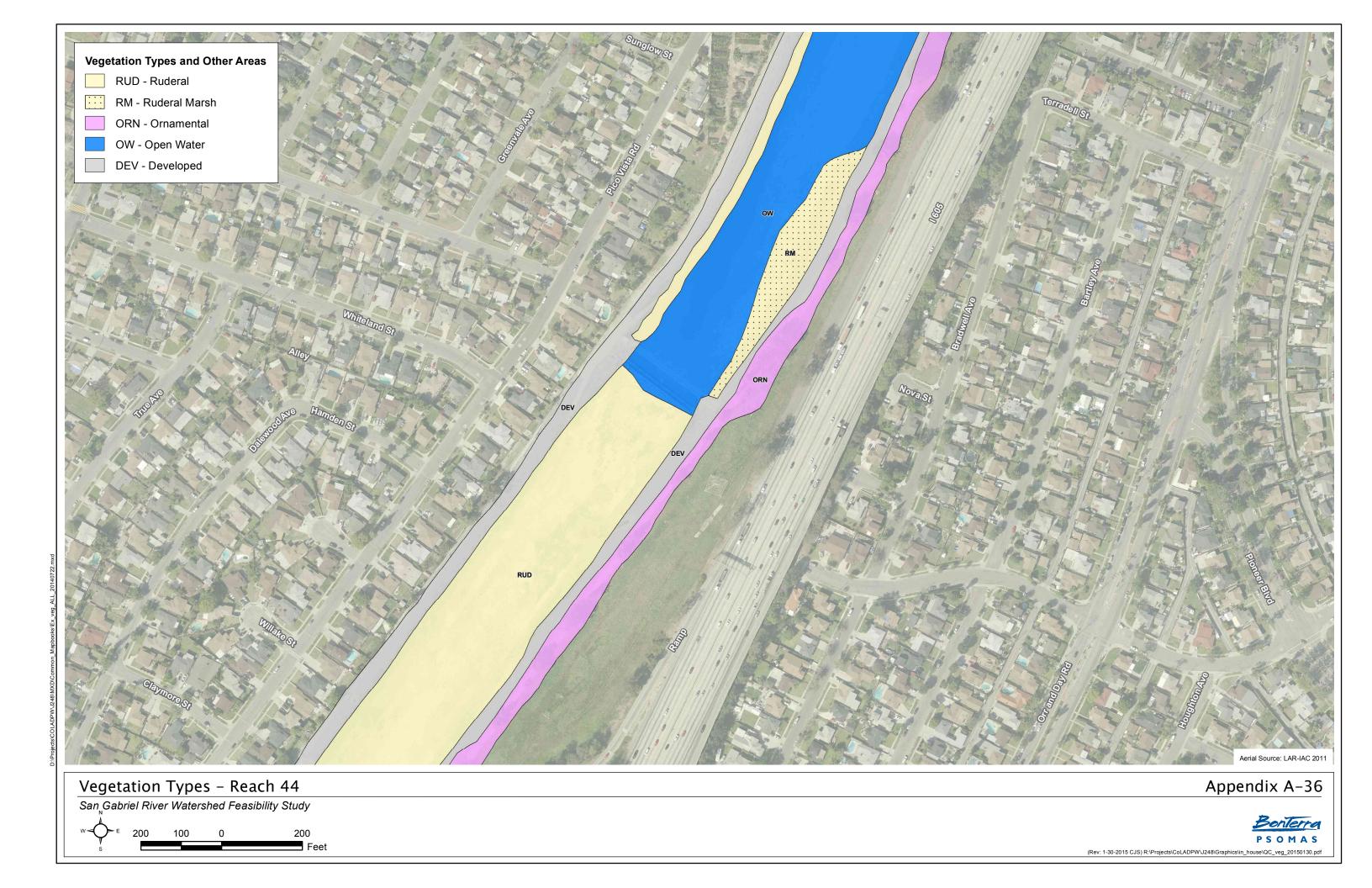


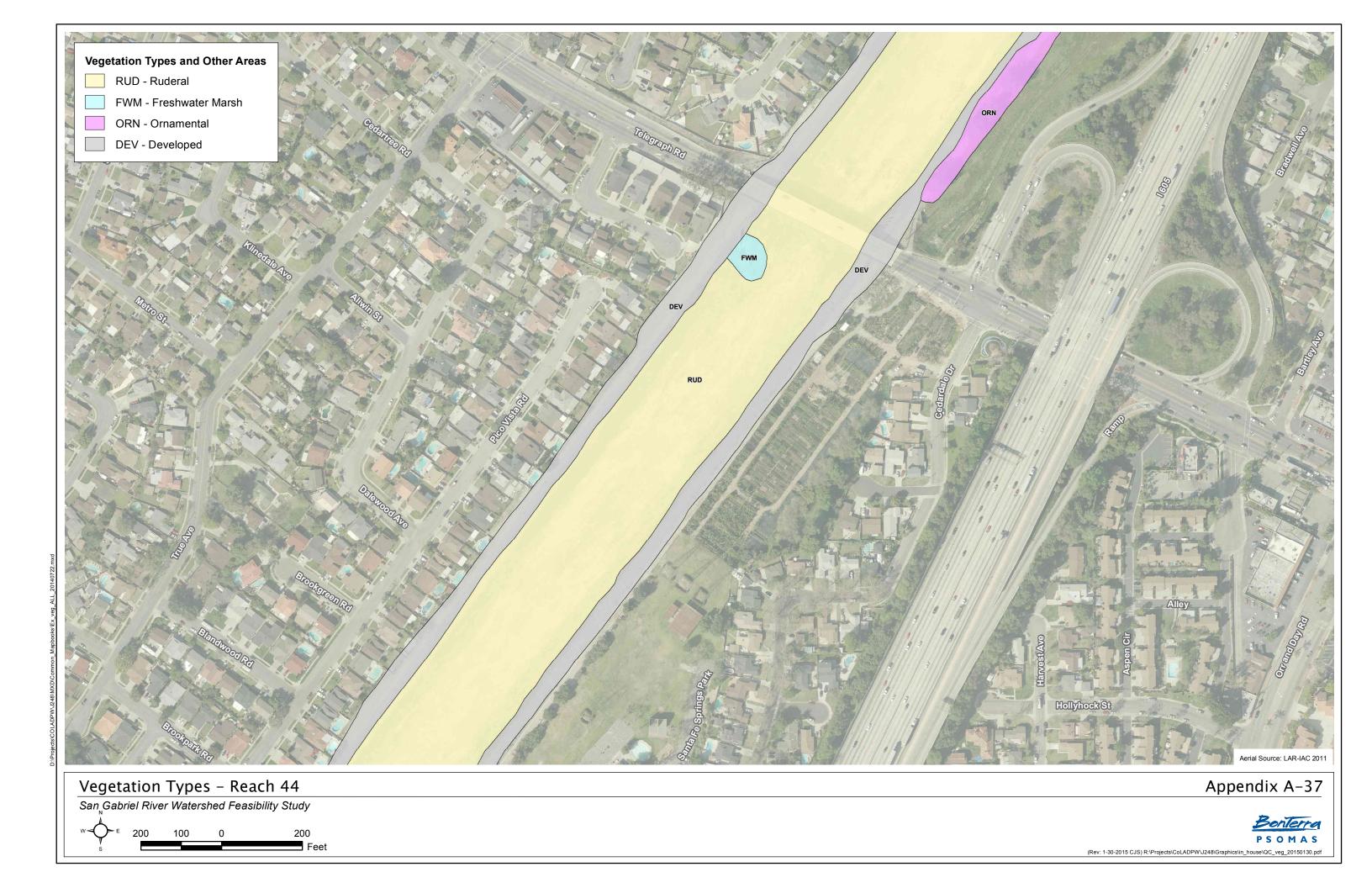


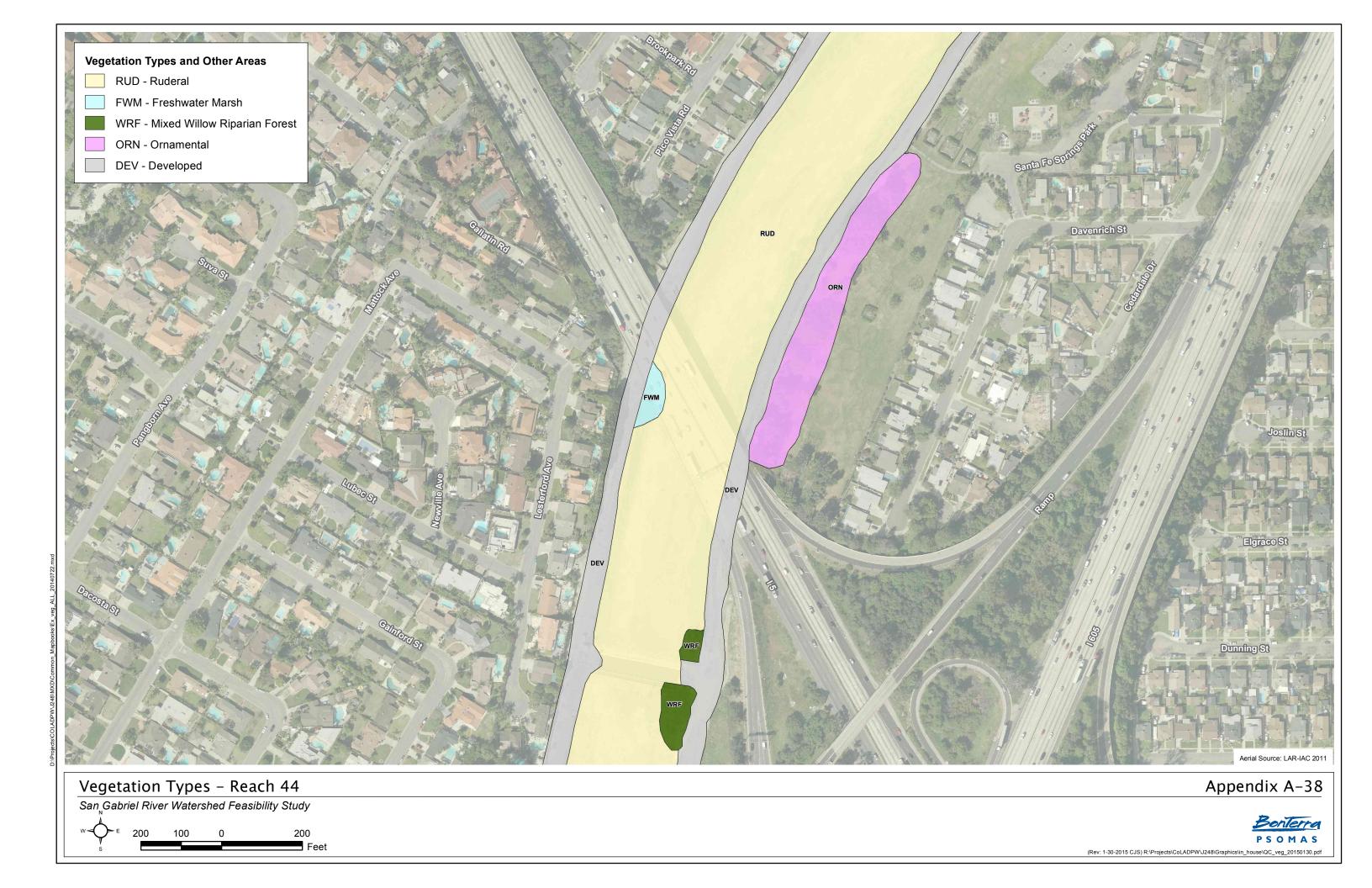
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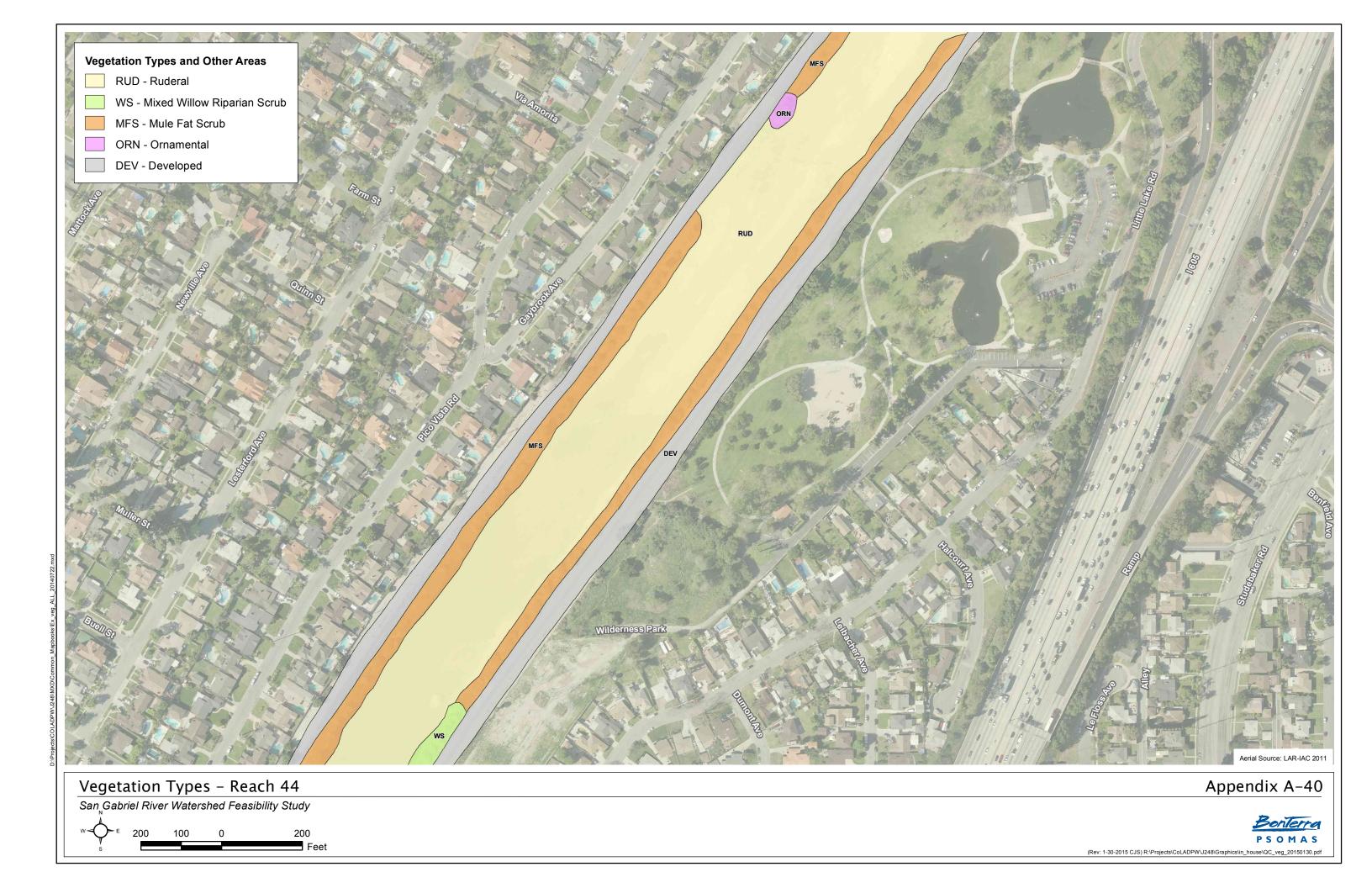


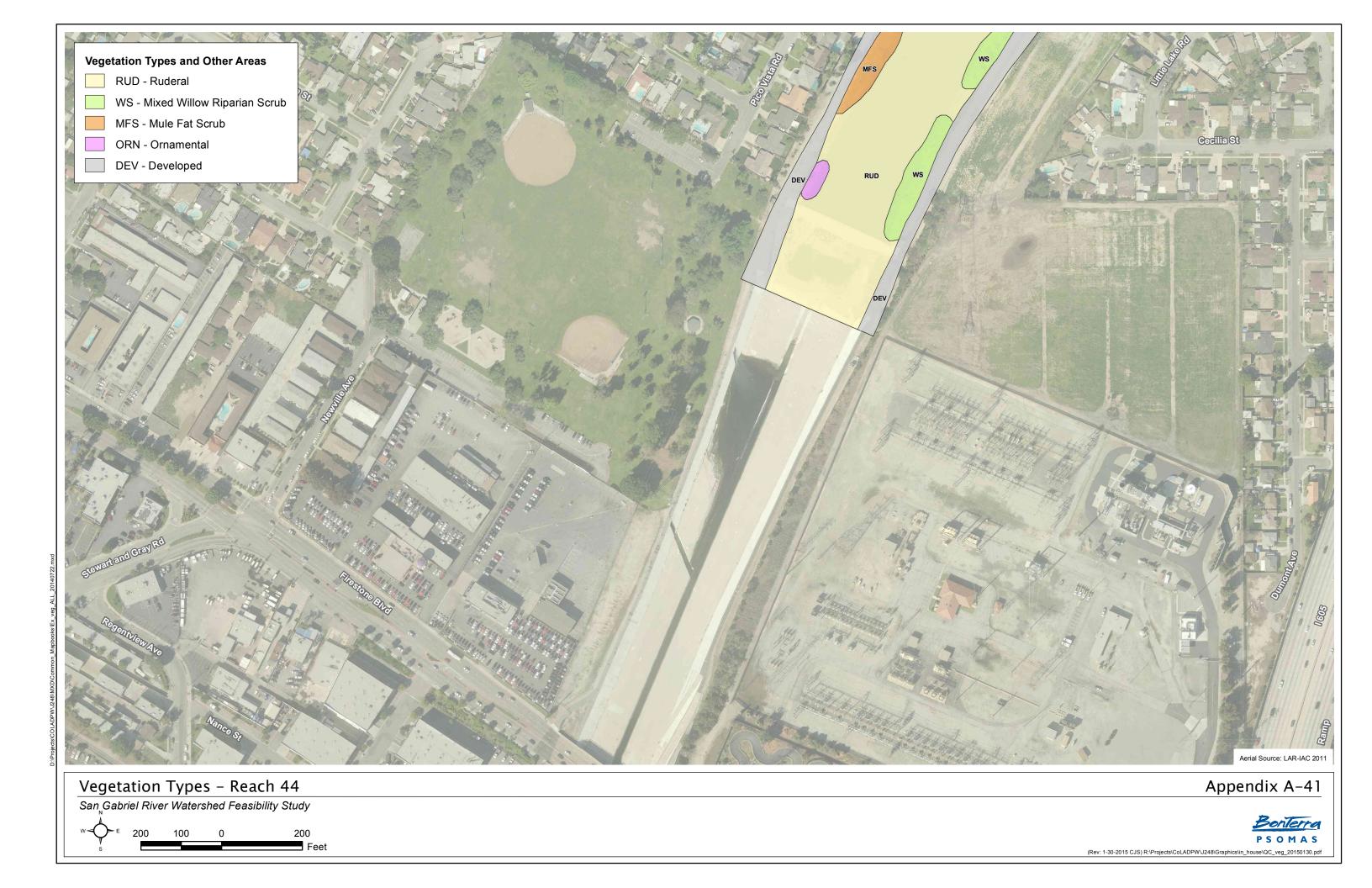


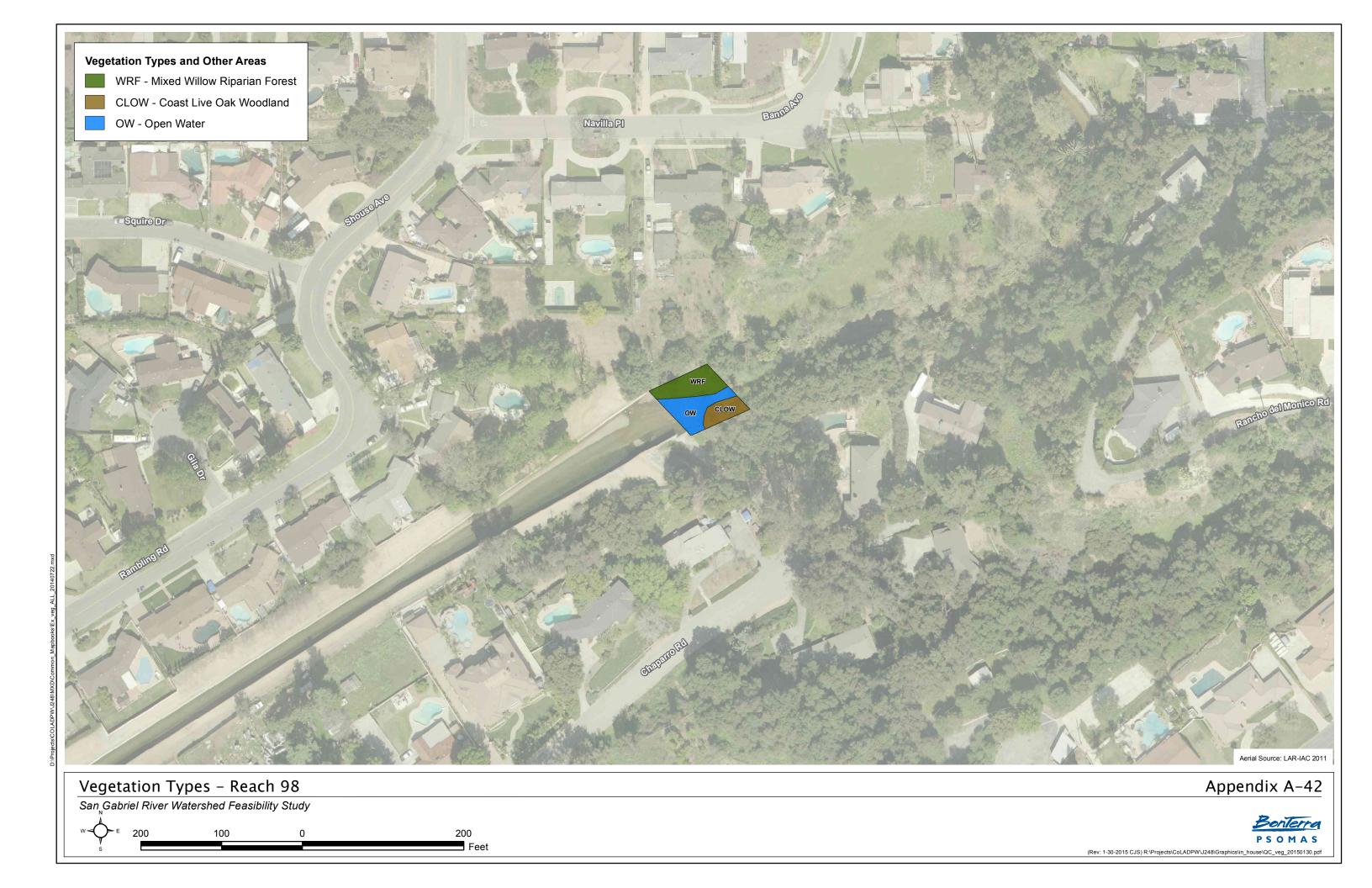


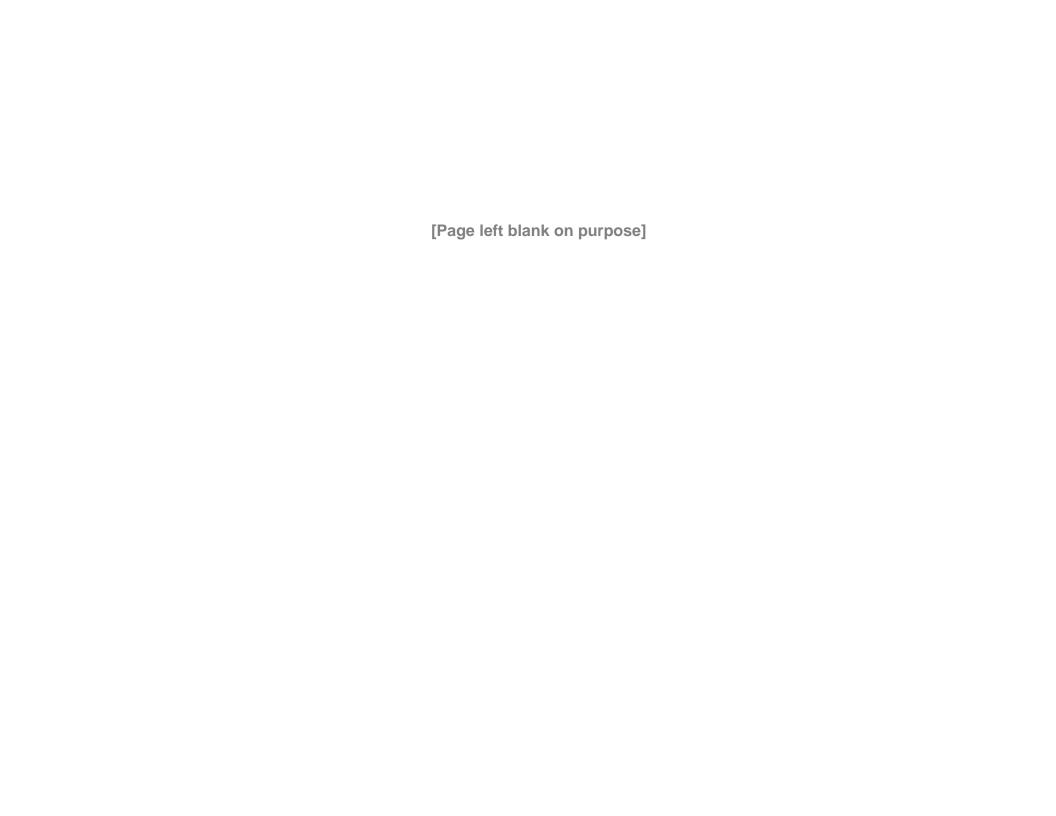


















Balancing the Natural and Built Environment

February 4, 2015

Jemellee Cruz
Los Angeles County Flood Control District
Flood Maintenance Division
County of Los Angeles
900 South Fremont Avenue, Annex Building, 2nd Floor
Alhambra, California 91803

VIAEMAIL jcruz@dpw.lacounty.gov

Subject:

Results of Focused Surveys for Special Status Plant Species for Seven Soft-Bottom Channels (Reaches 39, 40, 41, 42, 43, 44 and 98) of the San Gabriel River Watershed, Los Angeles County, California

Dear Ms. Cruz:

This Letter Report presents the findings of focused surveys for special status plant species conducted along seven soft-bottom channel (SBC) reaches (Reaches 39, 40, 41, 42, 43, 44 and 98) of the San Gabriel River Watershed in Los Angeles County, California. All seven reaches are maintained by the County of Los Angeles Department of Public Works (CLADPW). These focused surveys were performed for the San Gabriel River Watershed Feasibility Study. Table 1 below lists the number, length, and name of each channel reach, and their locations in a Thomas Guide.

TABLE 1 CHANNEL REACH INFORMATION

Reach No.	Reach Length (feet)	Reach Name	Thomas Guide Location
39	406	Beatty Channel Outlet at the San Gabriel River (upstream of Foothill Blvd.)	568-F4
40	33,370	San Gabriel River (Santa Fe Dam to Thienes Ave.)	598-B2 to 637-D5
41	6090	Walnut Creek (Baldwin Park Blvd. to San Gabriel River)	598-J2 to G2
42	801	San Jose Creek (1,000 feet from end of concrete channel)	598-G6
43	6,654	San Gabriel River – Upper (Whittier Narrows Dam to Beverly Blvd.)	677-A1 to 676-J2
44	30,895	San Gabriel River – Lower (Beverly Blvd. to Firestone Blvd.)	676-J3 to 706-E6
98	51	Walnut Creek - Channel Inlet	599-E6 to E7
Note: Read	ches 40 and 4	3 were split into 40a, 40b, 43a, and 43b following the focused rare plant survey.	

METHODS

Botanical surveys were floristic in nature and conducted following the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009). A literature search was conducted to identify special status plants and habitats known to occur in the vicinity of the survey areas. Sources reviewed include the U.S. Geological Survey's (USGS') Azusa, El Monte, Baldwin Park, San Dimas, and Whittier 7.5-minute quadrangles in the California Native Plant Society's (CNPS') <u>Electronic Inventory of Rare and Endangered Vascular Plants of California</u> (CNPS 2011) and the California Department of Fish and Game's (CDFG's) <u>California Natural Diversity Database</u> (CNDDB) (CDFG 2011). All of the special status plant species from these electronic database searches and their status are listed in Table 2.

TABLE 2
SPECIAL STATUS PLANT SPECIES KNOWN
FROM THE VICINITY OF THE SURVEY AREAS

		Status	
Species	USFWS	CDFG	CRPR
Astragalus brauntonii Braunton's milk-vetch	FE	_	1B.1
Atriplex parishii Parish's saltbush	_	_	1B.1
Atriplex serenana var. davidsonii Davidson's saltbush	_	_	1B.2
Berberis nevinii Nevin's barberry	FE	SE	1B.1
California macrophylla round-leaved filaree	_	_	1B.1
Calochortus clavatus var. gracilis slender mariposa lily	_	_	1B.2
Calochortus plummerae Plummer's mariposa lily	_	_	4.2
Calochortus weedii var. intermedius intermediate mariposa lily	_	_	1B.2
Centromadia parryi ssp. australis southern tarplant	_	_	1B.1
Chorizanthe parryi var. parryi Parry's spineflower	_	_	1B.1
Cladium californicum California saw-grass	_	_	2B.2
Cuscuta obtusiflora var. glandulosa Peruvian dodder		_	2B.2
Dodecahema leptoceras slender-horned spineflower	FE	SE	1B.1

TABLE 2 SPECIAL STATUS PLANT SPECIES KNOWN FROM THE VICINITY OF THE SURVEY AREAS

		Status	
Species	USFWS	CDFG	CRPR
Dudleya cymosa ssp. crebrifolia San Gabriel River dudleya	_	_	1B.2
Dudleya densiflora San Gabriel Mountains dudleya	_	_	1B.1
Dudleya multicaulis many-stemmed dudleya	_	_	1B.2
Galium grande San Gabriel bedstraw	_	_	1B.2
Hordeum intercedens vernal barley	_	_	3.2
Horkelia cuneata ssp. puberula mesa horkelia	_	_	1B.1
Imperata brevifolia California satintail	_	_	2B.1
Lasthenia glabrata ssp. coulteri Coulter's goldfields	_	_	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	_	_	4.3
Navarretia prostrata prostrate vernal pool navarretia	_	_	1B.1
Orcuttia californica California Orcutt grass	FE	SE	1B.1
Orobanche valida ssp. valida Rock Creek broomrape	_	_	1B.2
Phacelia stellaris Brand's star phacelia	FC	_	1B.1
Ribes divaricatum ssp. parishii Parish' gooseberry	_	_	1A
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	_	_	1B.2
Senecio aphanactis chaparral ragwort	_	_	2B.2
Symphyotrichum defoliatum San Bernardino aster	_	_	1B.2
Symphyotrichum greatae Greata's aster	_	_	1B.3

TABLE 2 SPECIAL STATUS PLANT SPECIES KNOWN FROM THE VICINITY OF THE SURVEY AREAS

		Status	
Species	USFWS	CDFG	CRPR
Thelypteris puberula var. sonorensis Sonoran maiden fern	-	_	2B.2
LEGEND:			
Federal (USFWS) FE Endangered SE En FC Candidate	<u>3)</u> ndangered		
California Rare Plant Rank (CRPR)			
1A Plants Presumed Extinct in California			
1B Plants Rare, Threatened, or Endangered in			
2 Plants Rare, Threatened, or Endangered in			lsewhere
3 Plants About Which We Need More Inform		/ List	
4 Plants of Limited Distribution – A Watch Lis	ST		
Threat Code Extensions			
.1 Seriously Threatened in California (over 80 immediacy of threat)	% of occurrences	s threatened/high	n degree and
.2 Fairly Threatened in California (20–80% of immediacy of threat)	occurrences thre	eatened/moderate	e degree and
.3 Not Very Threatened in California (<20% or immediacy of threat or no current threats ki		eatened/low deg	ree and

Reference populations were monitored for annual and difficult-to-detect target species to ensure that the scheduled surveys were comprehensive and conducted during these species' appropriate blooming period. Southern tarplant (*Centromadia parryi* ssp. *australis*) was observed blooming on July 12, 2011 in Costa Mesa, Parry's spineflower (*Chorizanthe parryi* var. *parry*) was observed blooming on April 26, 2011 in Rialto, and slender-horned spineflower (*Dodecahema leptoceras*) was observed blooming on April 28, 2011 in Santa Clarita. Based on the reference population monitoring, the Project surveys were conducted during a time frame when the target plant species were observable.

According to the National Weather Service (NWS), the region (data taken from downtown Los Angeles) received 20.20 inches of precipitation for the 2011 water year (i.e., between July 1, 2010 and June 30, 2011), which is about 133 percent of the normal average (NWS 2011). Therefore, precipitation for the year was conducive for conducting special status plant surveys.

Surveys were conducted by BonTerra Biologists Jennifer Pareti, Jeff Crain, and Allison Rudalevige and Consulting Botanist Sandra Leatherman. The survey dates and personnel are listed below in Table 3. Early surveys were conducted in all reaches in April and May for early-blooming special status plant species. Late surveys were not conducted for Reaches 42, 43, and 98 because the early surveys determined that suitable habitat for late-blooming special status plant species was not present along these reaches. A total of 78 person-hours were spent conducting all surveys.

TABLE 3 SURVEY DATES AND PERSONNEL

Reach	Early Survey	Surveyors	Late Survey	Surveyors	
39	April 22, 2011	Pareti, Leatherman	August 1, 2011	Pareti, Leatherman	
40	May 3, 2011	Rudalevige, Crain	July 22, 2011	Pareti, Leatherman	
44	May 2, 2044	July		Pareti, Leatherman	
41	May 3, 2011	Rudalevige, Crain	July 27, 2011	Pareti, Leatherman	
42	April 22, 2011	Pareti, Leatherman	no	survey	
43	May 3, 2011	Pareti, Leatherman	no	survey	
44	May 3, 2011	Pareti, Leatherman	August 1, 2011	Pareti, Leatherman	
98	April 22, 2011	Pareti, Leatherman	no survey		

All potentially suitable habitats for special status plant species within the survey areas were systematically surveyed. The survey areas included habitats on the earthen bottom of each channel reach but also on the adjacent channel banks where appropriate. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for later identification. Plants were identified to the taxonomic level necessary to determine whether or not they are a special status species. Plants were identified using taxonomic keys, descriptions, and illustrations in Baldwin et al. (2011), Hickman (1993), Munz (1974), Abrams (1923, 1944, 1951), and Abrams and Ferris (1960). Taxonomy and nomenclature follows Baldwin et al. (2011), Hickman (1993), and current scientific journals for scientific and common names. Any voucher specimens collected will be deposited with the herbarium at Rancho Santa Ana Botanic Gardens in Claremont, California.

SITE DESCRIPTION

Vegetation Types

Vegetation types and other areas mapped in the survey areas consists of 18 mapping units, described below¹.

Coastal sage scrub is present in Reach 39. This native vegetation type is dominated by California sagebrush (*Artemisia californica*) with desert brittlebush (*Encelia farinosa*), coastal prickly-pear (*Opuntia littoralis*), scale broom (*Lepidospartum squamatum*), and laurel sumac (*Malosma laurina*). The understory is relatively open and dominated by small native annual forbs including coastal deerweed (*Acmispon glaber*), popcorn flower (*Cryptantha* spp.), and non-native grasses.

Alluvial sage scrub is present in Reach 39. This native vegetation type is dominated by scale broom, with California sagebrush, desert brittlebush, and coastal goldenbush (*Isocoma menziesii*) occurring throughout. Western sunflower (*Helianthus annuus*), telegraph weed (*Heterotheca grandiflora*), strigose lotus (*Acmispon strigosus*), and common plantain (*Plantago major*) are present in the understory.

Disturbed alluvial sage scrub is present in Reach 40a. This native vegetation type is in the vicinity of the alluvial sage scrub described above. The overstory of this vegetation type is dominated by scale broom, with California sagebrush, desert brittlebush, and coastal goldenbush. The shrub cover is much less dense in these areas due to disturbance. The understory is dominated by non-native forbs, including common plantain, weedy cudweed (*Pseudognaphalium luteoalbum*), as well as crimson fountain grass (*Pennisetum*

Vegetation mapping was conducted on June 23 and 24, 2011 by BonTerra Senior Biologist Brian Daniels and Biologist Jennifer Pareti.

setaceum) and wild oat (Avena sp). Non-native common oleander (Nerium oleander) is also present in this vegetation area.

Non-native grassland is present in Reaches 43a and 43b. This vegetation type is composed of non-native grass species including rattail fescue (*Festuca myuros*), ripgut grass (*Bromus diandrus*), hare barley (*Hordeum murinum* var. *leporinum*), and perennial ryegrass (*Festuca perennis*). Additional non-native forbs are present throughout including tocalote (*Centaurea melitensis*), Italian thistle (*Carduus pycnocephalus*), and white sweetclover (*Melilotus alba*). A small number of scattered Goodding's black willows (*Salix gooddingii*) were also present.

Ruderal (weedy) areas are present in Reaches 39, 40a, 40b, 41, 42, 43a, 43b, and 44. This vegetation type consists of areas that have been previously disturbed and now primarily support non-native vegetation with some weedy native vegetation that is well-adapted to disturbed conditions and high nitrogen soils. These areas occur adjacent to the developed areas or in the more upland areas of the SBC reaches. Species present in these areas include western sunflower, Italian thistle, white sweetclover, curly dock (*Rumex crispus*), bermuda grass (*Cynodon dactylon*), tall umbrella-sedge (*Cyperus eragrostis*), willow weed (*Persicaria [Polygonum] lapthifolium*), annual beard grass (*Polypogon monspeliensis*), shortpod mustard (*Hirschfeldia incana*), smilo grass (*Piptatherum miliaceum*), Douglas' nightshade (*Solanum douglasii*), common horseweed (*Erigeron canadensis*), radish (*Raphanus sativus*), castor bean (*Ricinus communis*), and garland daisy (*Glebionis coronaria [Chrysanthemum coronarium*]). Scattered sandbar willow (*Salix exigua*) and mule fat (*Baccharis salicifolia*) were also present in these areas.

Ruderal/open water areas are present in Reaches 40b and 41. These areas are dominated by the ruderal species listed above that have been flooded by approximately one foot or more of water. These areas are generally outside the low-flow channel and, at some locations, the flooded area extends from the toe of slope to toe of slope of the SBC reaches.

Ruderal marsh is present in Reach 44. This vegetation type is dominated by low-growing herbaceous nonnative species that are either rooted in the water or rooted directly adjacent to the water. The ruderal marsh in these SBC reaches is dominated by willow weed, white sweetclover, and tall umbrella-sedge. Scattered bulrush (*Scirpus* sp.) was also present in these areas.

Freshwater marsh is present in Reaches 40a, 40b, 43b, and 44. This native vegetation type is dominated by bulrush and cattails (*Typha* spp.), which are emergent plants that grow in one or more feet of water. This vegetation type is typically found adjacent to the open water areas of the SBC reaches. This vegetation type's boundaries are constantly changing due to changes in the water levels and the rapid growth of this species. Plant species in low densities within the bulrush and cattails include sedges (*Cyperus* spp.), willow weed, and great marsh evening primrose (*Oenothera elata* ssp. *hirsutissima*) with occasional scattered mature Goodding's black willows.

Mixed willow riparian scrub is present at Reaches 40a, 40b, 41, 42, 43b, and 44. This native vegetation type is dominated by Goodding's black willow, arroyo willow (*Salix lasiolepis*), and narrow-leaved willow (*Salix exigua*). This vegetation type typically consists of relatively small stands of willows. The willows are of various sizes and heights due to differing frequencies of scouring from rain events. The willows range from seedlings to trees, the tallest of which are approximately 20 feet high. This vegetation type differs from the willow riparian forest vegetation type by the size of the patch; the overall height of the patch; and the density of the understory. The understory in mixed willow riparian scrub varies at each SBC reach in the amount of non-native and native herbaceous species to unvegetated wash under the trees. The herbaceous species in some of the understory areas include mule fat, mugwort (*Artemisia douglasiana*), giant reed (*Arundo donax*), hoary nettle (*Urtica dioica* ssp. *holosericea*), desert wild grape (*Vitis girdiana*), and California dodder (*Cuscuta californica*).

Mixed willow riparian forest is present at Reaches 40b, 43a, 43b, 44, and 98. This native vegetation type is dominated by Goodding's black willow. This vegetation type varies from the mixed willow riparian scrub vegetation type described above in that the canopy contains larger trees (i.e., greater than 20 feet in height) and the canopy tends to be more dense. The mixed willow riparian forest has more than a few large willow trees in each patch; has trees over 20 feet tall; and has a denser understory. The understory is sparse and dominated by willow seedlings and saplings with the occasional mule fat and giant reed distributed throughout.

Mule fat scrub is present in Reaches 39, 40a, 40b, 43a, 43b, and 44. This native vegetation type is dominated by mule fat, with scattered narrow-leaved willow, willow weed, western sunflower (*Helianthus annuus*), California dodder, great marsh evening primrose, Douglas' nightshade, and nonnative species such as castor bean, curly dock, shortpod mustard and Spanish sunflower (*Pulicaria paludosa*).

Coast live oak woodland is present in Reach 98. This native vegetation type is dominated by dense stands of coast live oak (*Quercus agrifolia*) rooted in or adjacent to the banks of the SBC reach. The understory is dominated by native and non-native species such as mugwort, narrow leaved bedstraw (*Galium angustifolium*) ornamental species such as English ivy (*Hedera helix*); and ruderal species such as smilo grass and other non-native grasses.

Ornamental areas are present in Reaches 40a and 44. This non-native vegetation type consists of introduced trees and shrubs planted for aesthetic purposes. A wide variety of ornamental landscaping occurs adjacent to the SBC reaches in conjunction with existing developments. Many of these ornamental species (including trees, shrubs, and other ground covers) have spread into the channel reaches in varying amounts. Ornamental vegetation has formed large patches in some channel reaches. Reach 40a has an ornamental area occurring in the center of the SBC reach which is dominated by mature mulberry trees (*Morus* sp.). SBC Reach 44 has ornamental areas present dominated by ash trees (*Fraxinus* sp.), carob trees (*Ceratonia siliqua*), and gum trees (*Eucalyptus* spp.).

Unvegetated wash is present in Reaches 40a, 40b, 41, 43b, and 44. Unvegetated wash is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. Unvegetated wash in the SBC reaches consists of bare sand or silt that does not contain any vegetation. These areas have been scoured and are typically colonized by riparian vegetation following scouring events.

Open water was present at the time of surveys and mapped in all nine SBC reaches of this feasibility study. Open water is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. Open water typically consists of fresh water in the center of the SBC reaches that was either flowing or ponding. These areas generally contain little to no vegetation.

Disturbed areas are present in Reach 43a. This is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. In this SBC reach, disturbed areas primarily consist of dirt roads. These areas typically contain exposed soil without concrete or development and little to no vegetation.

Ungrouted riprap is present in Reaches 40a and 40b. Both grouted riprap and riprap that is not grouted are generally mapped as developed areas on vegetation maps. Ungrouted riprap, however, can support substantial amounts of vegetation while grouted riprap typically supports very little vegetation. As a result, ungrouted riprap is delineated as a separate mapping unit on the vegetation maps. Ungrouted riprap is present on portions of the channel banks. Most vegetation present in ungrouted riprap in these two SBC reaches consists of ornamental and non-native ruderal species.

Developed areas are present in Reaches 39, 40a, 40b, 41, 42, 43a, 43b, and 44. This is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. These areas are man-made structures

that contain little to no vegetation. Any vegetation that is present typically consists of non-native ruderal species similar to that described above or invasive species such as fan palms (*Washingtonia* sp.), tree of heaven (*Ailanthus altissima*), and tree tobacco (*Nicotiana glauca*).

Special Status Plants

The special status plant species known to occur in the vicinity of the survey areas and their potential to occur along each channel reach is shown in Table 4. The potential was determined based upon the presence of suitable habitat in each survey area.

TABLE 4
SPECIAL STATUS PLANT SPECIES KNOWN FROM THE VICINITY
OF THE SURVEY AREAS AND THEIR POTENTIAL TO OCCUR
IN EACH CHANNEL REACH

				Reach			
Species	39	40	41	42	43	44	98
Astragalus brauntonii Braunton's milk-vetch	_	_	_	_	_	_	_
Atriplex parishii Parish's saltbush		_	_	_	_	_	_
Atriplex serenana var. davidsonii Davidson's saltbush	_	_	_	_	_	_	_
Berberis nevinii Nevin's barberry	Р	Р	Р	Р	Р	Р	Р
California macrophylla round-leaved filaree		_	_	_	_	_	_
Calochortus clavatus var. gracilis slender mariposa lily		_	_	_	_	_	_
Calochortus plummerae Plummer's mariposa lily		_	_	_	_	_	_
Calochortus weedii var. intermedius intermediate mariposa lily	_	_	_	_	_	_	_
Centromadia parryi ssp. australis southern tarplant	Р	Р	Р	_	_	Р	_
Chorizanthe parryi var. parryi Parry's spineflower	Р	Р	Р	Р	Р	Р	_
Cladium californicum California saw-grass		_	_	_	_	_	_
Cuscuta obtusiflora var. glandulosa Peruvian dodder	_	_	_	_	_	_	_
Dodecahema leptoceras slender-horned spineflower	Р	Р	Р	Р	Р	Р	_
Dudleya cymosa ssp. crebrifolia San Gabriel River dudleya		_	_	_	_	_	_
Dudleya densiflora San Gabriel Mountains dudleya	_	_	_	_	_	_	_
Dudleya multicaulis many-stemmed dudleya			_	_	_	_	_

TABLE 4 SPECIAL STATUS PLANT SPECIES KNOWN FROM THE VICINITY OF THE SURVEY AREAS AND THEIR POTENTIAL TO OCCUR IN EACH CHANNEL REACH

				Reach			
Species	39	40	41	42	43	44	98
Galium grande San Gabriel bedstraw	_	_	_	_	_	_	_
Hordeum intercedens vernal barley		_	_	_	_	_	_
Horkelia cuneata ssp. puberula mesa horkelia	_	_	_	_	_	_	_
Imperata brevifolia California satintail	_	_	_	_	_	_	_
Lasthenia glabrata ssp. coulteri Coulter's goldfields		_	_	_	_	_	_
Lepidium virginicum var. robinsonii Robinson's pepper-grass	Р	Р	_	_	_	_	_
Navarretia prostrata prostrate vernal pool navarretia	_	_	_	_	_	_	_
Orcuttia californica California Orcutt grass		_	_	_	_	_	-
Orobanche valida ssp. valida Rock Creek broomrape	_	_	_	_	_	_	_
Phacelia stellaris Brand's star phacelia	_	_	_	_	_	_	_
Ribes divaricatum ssp. parishii Parish' gooseberry	Р	Р	Р	Р	Р	Р	Р
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	_	_	_	_	_	_	_
Senecio aphanactis chaparral ragwort	_	_	_	_	_	_	_
Symphyotrichum defoliatum San Bernardino aster	_	_	_	_	_	_	_
Symphyotrichum greatae Greata's aster	Р	_	_	_	_	_	Р
Thelypteris puberula var. sonorensis Sonoran maiden fern	_	_	_	_	_	_	_

LEGEND:

- P Potential to occur due to the presence of suitable habitat.
- Not expected to occur due to the absence of suitable habitat.

SURVEY RESULTS

Two surveys were conducted in each of the survey areas, with the exception of Reaches 42, 43, and 98. One survey was conducted in these two reaches due to habitat type and potential plant species occurring there. No special status plant species were observed during the focused surveys. A list of all plants observed within each reach during focused surveys can be found in Attachment A. Although reference

populations and regional rainfall amounts were monitored to ensure the scientific adequacy of these focused surveys, there is always a minimal potential for false negative survey results as species could possibly be present on a site but may not be detectable at the time of the surveys.

If you have any comments or questions, please call Marc Blain at (626) 351-2000.

Sincerely,

BonTerra Psomas

Ann M. Johnston

Vice President, Resource Management

Marc T. Blain

Senior Project Manager

Attachment A – Plant Compendium

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ATTACHMENT A PLANT COMPENDIUM

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
PTERIDOPHYTES - FERNS AND	ALLIES							
PTERIDACEAE - BRAKE FAN	IILY							
Pellaea andromedifolia	coffee fern	х						
Pellaea mucronata	bird's foot fern	х						
Pentagramma triangularis ssp. triangularis	goldenback fern	х						
GYMNOSPERMS	<u>.</u>							
ANGIOSPERMAE - FLOWERING	PLANTS							
DICOTYLEDONES								
ADOXACEAE - MUSKROOT FA	AMILY							
Sambucus nigra ssp. caerulea	blue elderberry	х	х		х	Х	Х	
AMARANTHACEAE - AMARANTH	FAMILY							
Amaranthus albus*	tumbleweed			Х			Х	
ANACARDIACEAE - SUMAC FA	AMILY							
Malosma laurina	laurel sumac	х	х					
APIACEAE (UMBELLIFERAE) - CARF	ROT FAMILY							
Conium maculatum*	poison hemlock	х	Х	Х		Х	Х	
Daucus pusillus	rattlesnake weed	х						
Foeniculum vulgare*	sweet fennel			Х				
APOCYNACEAE - DOGBANE F	AMILY							
Nerium oleander*	common oleander		Х	Х				
ARALIACEAE - GINSENG FA	MILY							
Hedera helix*	English ivy							Х
ASTERACEAE (COMPOSITAE) - SUNFL	OWER FAMILY							
Acourtia microcephala	sacapellote						Х	
Ambrosia acanthicarpa	annual bur-sage	х	Х	Х				
Ambrosia psilostachya	western ragweed		Х				Х	
Anthemis cotula*	mayweed		Х				Х	
Artemisia californica	California sagebrush	х	Х	Х			Х	
Artemisia douglasiana	mugwort		Х					Х
Baccharis pilularis	coyote brush			Х				
Baccharis salicifolia ssp. salicifolia [Baccharis salicifolia]	mule fat	х	Х	Х		Х	Х	Х

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
Bidens frondosa	sticktight	Х		х		Х		
Bidens pilosa*	common beggar-ticks			Х				
Brickellia californica	California brickellbush	Х						
Carduus pycnocephalus var. pycnocephalus*	Italian thistle	Х		Х		Х	Х	х
Centaurea benedicta [Cnicus benedictus]*	blessed thistle			Х				
Centaurea melitensis*	tocalote/Maltese star thistle	Х	Х	Х	Х	Х		
Centaurea solstitialis*	yellow star-thistle			Х				
Cirsium vulgare*	bull thistle				х			
Erigeron bonariensis [Conyza bonariensis]*	flax-leaved horseweed				х			
Erigeron canadensis [Conyza canadensis]	common horseweed	Х	Х	х	х	Х	Х	
Cotula australis*	Australian cotula				х			
Cotula coronopifolia*	brass-buttons				х			
Encelia farinosa	brittlebush	Х						
Euthamia occidentalis	western goldenrod						х	
Glebionis coronaria [Chrysanthemum coronarium]*	garland daisy		х	х	х	Х	Х	
Gnaphalium palustre	lowland cudweed				х			
Helianthus annuus	western sunflower	Х	х	х	х		х	
Helminthotheca echioides [Picris echioides] *	bristly ox-tongue	Х						
Heterotheca grandiflora	telegraph weed		х	х				
Heterotheca sessiliflora	sessileflower goldenaster		х					
Isocoma menziesii	goldenbush		х					
Lactuca serriola*	prickly lettuce	Х	х	х	х	Х		
Lepidospartum squamatum	scale-broom	Х	х					
Logfia filaginoides [Filago californica]	California cottonrose	Х	Х					
Logfia gallica [Filago gallica] *	daggerleaf cottonrose	Х						
Malacothrix saxatilis	cliff malacothrix		Х					
Pseudognaphalium canescens [Gnaphalium canescens]	everlasting		Х					
Pseudognaphalium luteoalbum [Gnaphalium luteoalbum] *	weedy cudweed		Х	Х			Х	
Pulicaria paludosa*	Spanish sunflower						Х	
Silybum marianum*	milk thistle	Х		Х				
Sonchus asper ssp. asper*	prickly sow thistle	Х						

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
Sonchus oleraceus*	common sow thistle		Х	Х	Х	Х	х	х
Symphyotrichum subulatum [Aster subulatum var. ligulatum]	slender aster						х	
Xanthium spinosum	spiny cocklebur			Х				
Xanthium strumarium	cocklebur	Х	Х	Х			Х	
<i>BORAGINACEAE</i> - BORAGE FA	MILY							
Amsinckia menziesii [Amsinckia menziesii var. menziesii]	rigid fiddleneck							х
Cryptantha intermedia	common cryptantha	Х						
Eriodictyon sp.	yerba santa		Х					
Heliotropium curassavicum var. oculatum	salt heliotrope / alkali heliotrope			х			х	
Pectocarya linearis	slender pectocarya	Х						
Phacelia cicutaria	caterpillar phacelia	Х		Х				
Phacelia ramosissima	branching phacelia	Х						
Phacelia sp.	phacelia	Х						
BRASSICACEAE (CRUCIFERAE) - MUS	ΓARD FAMILY							
Brassica nigra*	black mustard	х	х					
Capsella bursa-pastoris*	shepherd's purse				Х			
Hirschfeldia incana*	shortpod mustard	Х	Х	Х	Х	Х	Х	х
Lepidium dityotum [Coronopus didymus]*	lesser wart cress				Х			
Lepidium latifolium*	broad-leaved peppergrass		Х	Х			Х	
Lobularia maritima*	sweet alyssum	Х		Х				
Nasturtium officinale [Rorippa nasturtium-aquaticum]*	water cress	Х						
Raphanus sativus*	radish		Х	Х	Х	Х	Х	Х
Sisymbrium orientale*	hare's ear cabbage	Х						
CACTACEAE - CACTUS FAM	ILY							
Opuntia ficus-indica*	mission prickly-pear			Х				
CARYOPHYLLACEAE - PINK FA	MILY							
Cerastium glomeratum*	sticky mouse-ear chickweed	х						
Stellaria media*	common chickweed							Х

A-3

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
CHENOPODIACEAE - GOOSEFOO	T FAMILY							
Chenopodium album*	lamb's quarters	х	Х	х			х	
Dysphania ambrosioides [Chenopodium ambrosioides] *	Mexican tea	х		х				
Salsola tragus*	Russian thistle	х		х				
CONVOLVULACEAE - MORNING-GLO	DRY FAMILY							
Calystegia macrostegia	morning-glory			х				
Convolvulus arvensis*	bindweed			х				
Cuscuta californica	chaparral dodder		х			х	х	
CRASSULACEAE - STONECROP	FAMILY							
Crassula connata	pygmy-weed	х						
Dudleya sp.	dudleya	х						
EUPHORBIACEAE - SPURGE F	AMILY							
Chamaesyce sp.*	spurge		х					
Euphorbia peplus*	petty spurge	х						
Ricinus communis*	castor bean	х	х	х	х	Х	х	
FABACEAE (LEGUMINOSAE) - LEGU	IME FAMILY							
Acacia baileyana*	cootamundra wattle	х						
Acmispon americanus [Lotus purshianus]	lotus		Х					
Acmispon strigosus [Lotus strigosus]	strigose lotus		Х					
Acmispon glaber [Lotus scoparius]	deerweed	х	Х	х				
Lupinus bicolor	miniature lupine			Х				
Lupinus hirsutissimus	stinging lupine		Х					
Lupinus sp.	lupine			Х				
Medicago polymorpha*	California burclover		Х					Х
Melilotus alba*	white sweetclover	х	Х				Х	
Melilotus indica*	sourclover	х	Х	Х	Х	Х	Х	Х
Parkinsonia aculeata*	Mexican palo verde			Х				
Robinia psuedoacacia*	black locust			Х				
Vicia sp.	vetch		х					
FAGACEAE - OAK / BEECH FA	MILY							
Quercus agrifolia	coast live oak			Х				Х

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
GERANIACEAE - GERANIUM FAMILY	Y							
Erodium botrys* long	g-beaked filaree			х				
Erodium cicutarium* red	l-stemmed filaree	х	Х					
GROSSULARIACEAE - GOOSEBERRY FA	AMILY							
Ribes aureum gold	den currant	Х						
LAMIACEAE (LABIATAE) - MINT FAMIL	LY							
Marrubium vulgare* con	mmon horehound	Х	Х					
Salvia apiana whi	ite sage	Х						
Salvia columbariae chia	a	Х						
Salvia mellifera x apiana sag	ge hybrid		Х					
MALVACEAE - MALLOW FAMILY								
Malva parviflora* che	eeseweed	Х			Х		Х	Х
MORACEAE - FIG FAMILY								
Ficus carica* edil	ble fig							Х
Ficus elastica * rub	ber plant		х					
Ficus sp.*	amental fig	х						
Morus alba * whi	ite mulberry		Х	Х				
SCROPHULARIACEAE- FIGWORT FAMILY [MYOPORACEAE	E - MYOPORUM FAMILY]							
Myoporum laetum myo	oporum					Х		
MYRSINACEAE - MYRSINE FAMILY	,							
Anagallis arvensis* sca	arlet pimpernel	х			Х			
Callistemon sp. * bott	tlebrush						х	
Eucalyptus sp.* gun	m		х	х		х		
NYCTAGINACEAE - FOUR-O'CLOCK FAM	MILY							
Mirabilis jalapa* four	r-o'clock	х						
OLEACEAE - OLIVE FAMILY								
Fraxinus sp. * ash	1		Х			Х	Х	Х
ONAGRACEAE - EVENING PRIMROSE FA	AMILY							
Camissonia sp. sun	ncup		Х					
Epilobium canum Cal	lifornia fuchsia		Х					
Epilobium ciliatum wille	ow-herb	Х						

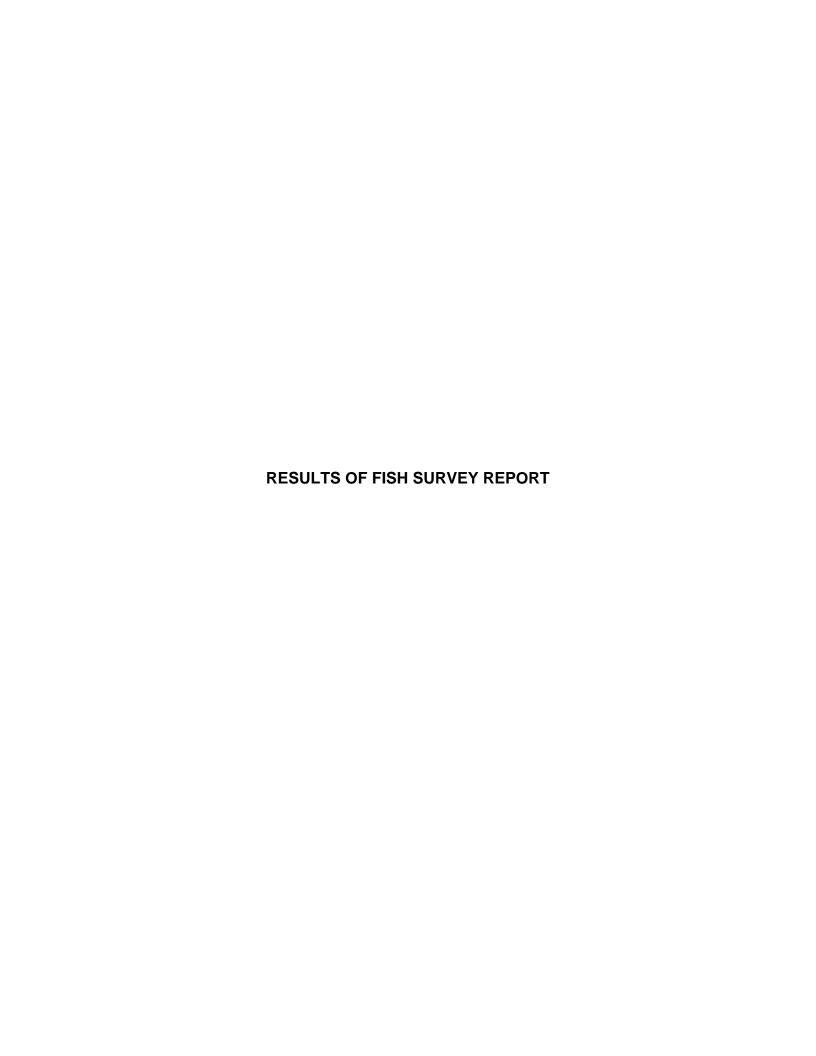
Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
Ludwigia sp.*	waterweed						Х	
Oenothera elata ssp. hookeri	evening primrose		Х			Х		
Oenothera speciosa*	showy-white evening primrose				Х			
PAPAVERACEAE - POPPY	FAMILY							
Eschscholzia californica	California poppy	Х		Х				
PHRYMACEAE - LOPSEED	FAMILY							
Mimulus guttatus	seep monkeyflower	Х	Х	Х			Х	Х
PLANTAGINACEAE - PLANTA	N FAMILY							
Penstemon spectabilis	royal penstemon	Х						
Plantago erecta	dwarf plantain / California plantain			х				
Plantago arenaria [Plantago indica]*	sand plantain		Х	Х			Х	
Plantago lanceolata*	English plantain		х				Х	
Plantago major*	common plantain				х			х
Veronica anagallis-aquatica*	water speedwell	Х			Х			Х
Veronica sp.	speedwell	Х						
POLEMONIACEAE - PHLOX	FAMILY							
Allophyllum glutinosum	blue false-gilia			х				
Eriastrum densifolium ssp. densifolium	woolly-star	Х						
POLYGONACEAE - BUCKWHE	AT FAMILY							
Eriogonum fasciculatum	California buckwheat	Х	х	х				
Persicaria lapathifolia [Polygonum lapathifolium]	willow weed			х			Х	
Persicaria maculosa [Polygonum persicaria]*	lady's thumb	Х						
Polygonum aviculare ssp. depressum [Polygonum arenastrum]*	common knotweed	х		х				
Polygonum sp.	knotweed	Х						
Rumex crispus*	curly dock	Х	х	х		Х	Х	х
PORTULACACEAE - PURSLAN	IE FAMILY							
Portulaca oleracea*	common purslane			х			Х	
ROSACEAE - ROSE FAM	MILY							
Rubus ursinus	California blackberry					Х		

A-6

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
SALICACEAE - WILLOW FA	MILY							
Populus sp.	cottonwood			х				
Salix exigua	narrow-leaved willow		Х	Х		Х	Х	
Salix gooddingii	Goodding's black willow	х	Х	Х	Х		Х	
Salix laevigata	red willow		Х			Х		
Salix lasiolepis	arroyo willow	х				Х	Х	Х
Koelreuteria bipinnata *	Chinese flame tree						Х	
SCROPHULARIACEAE - FIGWO	RT FAMILY							
Verbascum virgatum*	wand mullein	х	Х				Х	
SIMAROUBACEAE - QUASSIA	FAMILY							
Ailanthus altissima*	tree of heaven						Х	
SOLANACEAE - NIGHTSHADE	FAMILY							
Datura wrightii	jimson weed			Х			Х	
Nicotiana glauca*	tree tobacco	х		Х	Х			
Solanum douglasii	Douglas' nightshade	х	Х	Х		Х		
Solanum xanti	chaparral nightshade	х						
<i>TAMARICACEAE</i> - TAMARISK	FAMILY							
Tamarix ramosissima*	Mediterranean tamarix	х		х				
<i>ULMACEAE</i> - ELM FAMI	LY							
Ulmus parvifolia*	Chinese elm			Х			Х	
<i>URTICACEAE</i> - NETTLE FA	MILY							
Urtica dioica ssp. holosericea	hoary nettle	х				Х		
Urtica urens*	dwarf nettle				Х			
<i>VERBENACEAE</i> - VERVAIN	AMILY							
Verbena sp.	verbena		Х					
<i>VITACEAE</i> - GRAPE FAN	ILY							
Vitis girdiana	desert wild grape					Х		
ZYGOPHYLLACEAE - CALTRO	PFAMILY							
Tribulus terrestris*	puncture vine			Х				

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
MONOCOTYLEDONES - MC	NOCOTS							
<i>AGAVACEAE</i> - CENTURY PLA	NT FAMILY							
Agave americana*	century plant			х				
Hesperoyucca whipplei [Yucca whipplei]	our Lord's candle	х	х					
ARECACEAE (PALMAE) - PA	LM FAMILY							
Phoenix sp.*	date palm							Х
Washingtonia sp. *	fan palm	х		х	х		х	Х
CYPERACEAE - SEDGE I	FAMILY							
Cyperus involucratus*	African umbrella-sedge	х	х	х			х	
Cyperus sp.	umbrella-sedge					х		
Eleocharis sp.	spike rush							Х
Schoenoplectus americanus [Scirpus americanus]	Olney's bulrush						х	
Schoenoplectus californicus [Scirpus californicus]	southern bulrush					х		
Scirpus sp.	sedge						х	
JUNCACEAE - RUSH FA	AMILY							
Juncus bufonius	toad rush				х			
Juncus sp.	rush			х				
POACEAE [GRAMINEAE] - GR	ASS FAMILY							
Arundo donax*	giant reed	х	х	х		х	Х	
Avena barbata*	slender wild oat		х					
Avena sp.*	wild oat	х	Х	Х			Х	Х
Bromus arizonicus	Arizona chess				х			
Bromus diandrus*	ripgut grass		х	Х	х	х	Х	Х
Bromus hordeaceus*	soft chess		Х					
Bromus madritensis ssp. rubens*	red brome	х	Х	Х		Х	Х	
Cynodon dactylon*	bermuda grass		Х	Х			Х	
Distichlis spicata	salt grass		Х	Х				
Echinochloa crus-galli*	barnyard grass		Х	Х	Х		Х	
Elymus condensatus [Leymus condensatus]	giant wild rye		Х					
Festuca myuros [Vulpia myuros] *	foxtail fescue	х	Х	х		Х	х	
Hordeum murinum var. leporinum*	hare barley							х

Species		Reach 39	Reach 40	Reach 41	Reach 42	Reach 43	Reach 44	Reach 98
Leptochloa fusca ssp. uninervia [Leptochloa uninervia]	Mexican sprangletop		Х	Х	х		Х	
Lolium perenne*	perennial ryegrass	Х	Х	Х	Х		Х	
Paspalum dilatatum*	dallis grass						Х	
Pennisetum setaceum*	crimson fountain grass		Х	Х				
Phalaris sp.	canary grass		Х				Х	
Piptatherum miliaceum*	smilo grass / millett ricegrass		Х	Х		Х	Х	
Polypogon monspeliensis*	annual beard grass	Х	Х	Х	Х			Х
Polypogon sp.	beard grass	Х						Х
Schismus barbatus*	Mediterranean schismus	Х						
Sorghum halepense*	Johnson grass			Х			Х	
TYPHACEAE - CATTAIL FAMILY								
Typha sp.	cattail	Х	Х	Х	Х	Х	Х	Х
* non-native species	•	•	•		•	•	•	







2013 Focused Survey Results

Los Angeles County Soft-Bottom Channels

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March 2014



TABLE OF CONTENTS

<u>Section</u>			<u>P</u>	<u>age</u>
Executive Su	ımmary	·		1
Section 1.0	Introd	uction.		5
	1.1	Enviro	nmental Setting	5
		1.1.1	Regional Setting	5
		1.1.2	Local Setting	6
	1.2	Project	t	7
		1.2.1 1.2.2	Background Project Description	
	1.3	Specia	I Status Species Background	8
		1.3.1 1.3.2	Unarmored Threespine Stickleback	8
Section 2.0	Surve	v Metho	ods	. 13
	2.1		ored Threespine Stickleback and Santa Ana Sucker	
Section 3.0	Surve	y Resul	ts	. 15
	3.1	Los An	geles River Area	15
		3.1.1 3.1.2	Reach 12 – Haines Canyon Main Channel Outlet Reach 13 – Project No. 5215 Unit 1	
	3.2	San G	abriel River Area	16
		3.2.1	Reach 39 – Beatty Channel Outlet at San Gabriel River	. 16
	3.3	Santa	Clara River Area	17
		3.3.1	Reach 47 – Santa Clara River (PD 1733 Unit 1)	
		3.3.2	Reach 51 – Mint Canyon Main Channel Outlet (PD 1984)/ Santa Clara River – Main Channel	
		3.3.3	Reach 54 – Santa Clara River Non-Main Channel (PD 832)	
		3.3.4	Main Channel Outlet Reach 55 – Santa Clara River Channel (PDS 910, 832, 1758,	. 18
			& 1562 Unit 2)	
			Reach 56 - Santa Clara River Channel (PD 1562 Unit 2)	
			Reach 58 – Santa Clara Main River Channel (PD 374)	
			Reach 59 – Santa Clara River Main Channel (PD 374)	. 20
		3.3.8	Reach 60 – Santa Clara River Main Channel (PD 1339	20
		3.3.9	and 374) Reach 61 – Santa Clara River (PD 659)	. 20 21
			Reach 62 – Santa Clara River (PD 754)	
			Reach 63 – Oak Ave Road Drainage (CDR 523.081)	
			Reach 64 – Soledad Canyon Road Drainage (CDR 523.001)	
		3.3.12	Outlet)	. 22
		3.3.13	Reach 66 – Santa Clara River (PD 1538)	. 23
			Reach 67 – Bouquet Canyon Creek Upper (PDS 1201, 802,	
			700B, and 625B)	. 23

Section 4.0	References	32
	McBean Parkway (MTD 1510)	30
	3.3.27 Reach 109 – Santa Clara River – South Bank West of	
	3.3.26 Reach 105 – San Francisquito Channel (PD 2456)	30
	3.3.25 Reach 104 – Castaic Creek (PD 2441 – Units 1 and 2)	
	3.3.24 Reach 103 – Bouquet Canyon Channel (PD 2225)	
	3.3.23 Reach 97 – Castaic Creek (PD 1982)	
	Outlet	27
	3.3.22 Reach 87 – Castaic-Old Road Drainage (CDR 525.021D)	
	3.3.21 Reach 86 – Violin Canyon Main Channel Outlet	
	3.3.20 Reach 82 – Santa Clara River Main Channel (PD 2278)	
	1946)	26
	3.3.19 Reach 80 – South Fork – Santa Clara River (PDS 1947 and	
	Boulevard Bridge Stabilizer)	25
	3.3.18 Reach 79 – South Fork – Santa Clara River (Valencia	
	3.3.17 Reach 71 – Santa Clara River Main Channel (PD 1946)	
	3.3.16 Reach 70 – Bouquet Canyon Creek Lower (PDS 544 and 345).	
	1365, 1065, and 451)	24
	3.3.15 Reach 69 – Bouquet Canyon Creek Middle (PDS 772, 773,	

TABLES

<u>Table</u>		<u>Page</u>
ES-1	Summary of 2013 Results of Focused Surveys for the Los Angeles County	
	Soft-Bottom Channels	2
1	Status of Species Addressed	
2	Reach 12 – Haines Canyon Main Channel Outlet	15
3	Reach 13 – Project No. 5215 Unit 1	16
4	Reach 39 – Beatty Channel Outlet at San Gabriel River	16
5	Reach 47 – Santa Clara River (PD 1733 Unit 1)	17
6	Reach 51 – Mint Canyon Main Channel Outlet (PD 1984) / Santa Clara River –	
	Main Channel	17
7	Reach 54 - Santa Clara River Non-Main Channel (PD 832) Main Channel Outlet	
8	Reach 55 – Santa Clara River Channel (PDS 910, 832, 1758, and 1562 Unit 2)	18
9	Reach 56 – Santa Clara River Channel (PD 1562 Unit 2)	
10	Reach 58 – Santa Clara River Channel (PD 374)	
11	Reach 59 – Santa Clara River Channel (PD 374)	
12	Reach 60 – Santa Clara River Channel (PD 1339 and 374)	
13	Reach 61 – Santa Clara River (PD 659)	
14	Reach 62 – Santa Clara River (PD 754)	
15	Reach 63 – Oak Ave Road Drainage (CDR 523.081)	
16	Reach 64 – Soledad Canyon Road Drainage (CDR 523.071D Outlet)	
17	Reach 66 – Santa Clara River (PD 1538)	
18	Reach 67 – Bouquet Canyon Creek Upper (PDS 1201, 802, 700B, & 625B)	
19	Reach 69 – Bouquet Canyon Creek Middle (PDS 772, 773, 1365, 1065, and 451).	
20	Reach 70 – Bouquet Canyon Creek Lower (PDS 544 and 345)	
21	Reach 71 – Santa Clara River Main Channel (PD 1946)	
22	Reach 79 – South Fork – Santa Clara River (Valencia Boulevard Bridge Stabilizer)	
23	Reach 80 – South Fork – Santa Clara River (PDS 1947 and 1946)	26

24	Reach 82 – Santa Clara River Main Channel (PD 2278)	27
25	Reach 86 – Violin Canyon Main Channel Outlet	
26	Reach 87 – Castaic-Old Road Drainage (CDR 525.021D) Outlet	
27	Reach 97 – Castaic Creek (PD 1982)	
28	Reach 103 – Bouquet Canyon Channel (PD 2225)	29
29	Reach 104 – Castaic Creek (PD 2441 – Unit 2)	29
30	Reach 105 – San Francisquito Channel (PD 2456)	
31	Reach 109 - Santa Clara River - South Bank West of McBean Parkway (MTD	

EXHIBITS

<u>Exni</u>	<u>iDit</u>	Follows Page
1	Regional Location of All Reaches Surveyed	13
2a	Site Photographs	
2b	Site Photographs	

APPENDICES

A Surveyor Certificate Statement

EXECUTIVE SUMMARY

Focused surveys for Threatened and Endangered species are conducted on a regular basis at selected soft-bottom channel reaches maintained by the Los Angeles County Department of Public Works (LACDPW). Annual biological monitoring and periodic habitat assessments of all LACDPW channel reaches serves to update and revise, when necessary, the particular channel reaches and species for which surveys are recommended. This report describes the methods and results of focused surveys for two Endangered species—unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) and Santa Ana sucker (*Catostomus santaanae*)—conducted at 30 channel reaches in 2013. Also included is a maintenance overview with respect to these species. The 2013 survey results are summarized below.

FISH

UNARMORED THREESPINE STICKLEBACK

Focused surveys for unarmored threespine stickleback were conducted in 2013 within the Santa Clara River drainage at the following 27 soft-bottom channel reaches:

- Santa Clara River Reaches 47, 51, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 66, 71, 82, and 109.
- Bouquet Canyon Creek Reaches 67, 69, 70, and 103.
- South Fork Santa Clara River Reaches 79 and 80, at the confluence of the Santa Clara and South Fork Santa Clara Rivers.
- Castaic Creek Reaches 86, 87, 97, and 104.
- San Francisquito Creek Reach 105.

These channel reaches have previously been identified as having potentially suitable breeding habitat during the spring and summer season for unarmored threespine stickleback when water is present.

The focused surveys were conducted by fisheries biologists that hold the necessary Section 10(a)(1)(A) permit (Scientific Permit) for this species. The unarmored threespine stickleback was not found at any of the 27 soft-bottom channel reaches in 2013. Only one reach—Reach 69, Bouquet Canyon Middle--was found to contain unarmored threespine stickleback during the 2012 focused surveys (BonTerra 2013). Tthough not detected during the 2013 surveys, previous focused surveys have detected unarmored threespine stickleback at Reaches 67, 69, 103, and 109 (BonTerra 2011).

Unarmored threespine stickleback typically breed in the spring and early summer and are normally found in pools and slow flowing clean water with abundant vegetation. As a result, this species would not be expected to occur in the reach until after storm events. Soft-bottom channel maintenance is conducted in the dry months between September and November. Therefore, if unarmored threespine stickleback were present, the maintenance activity would not be expected to impact breeding activities.

1

SANTA ANA SUCKER

Focused surveys for Santa Ana sucker were conducted in 2013 within the San Gabriel River and Los Angeles River drainages at three soft-bottom channel reaches:

- San Gabriel River Reach 39 (Beatty Channel Outlet).
- Los Angeles River Reaches 12 (Haines Creek Main Channel Outlet) and 13 (Project No. 5215 Unit 1).

These channel reaches have previously been identified as having potentially suitable breeding habitat for Santa Ana sucker during the spring and summer season when water is present.

The focused surveys were conducted by fisheries biologists that hold the necessary Section 10(a)(1)(A) permit (Scientific Permit) for this species. The results of focused surveys for the Santa Ana sucker were negative at all reaches. Previous focused surveys have not detected for Santa Ana sucker at any of the reaches surveyed (Table ES-1).

Santa Ana sucker typically breed in the spring and early summer and are normally found in clean, flowing water habitat containing a mixed structure of riffles, runs, glides, and pools. Soft-bottom channel maintenance is conducted in the dry months between September and November. Therefore, if Santa Ana sucker were present, these maintenance activities would not be expected to impact the species' breeding activities.

TABLE ES-1
SUMMARY OF 2013 RESULTS OF FOCUSED SURVEYS FOR THE
LOS ANGELES COUNTY SOFT-BOTTOM CHANNELS

Reach Number	Reach Name/Tributary	Survey Date	Unarmored Threespine Stickleback P/A	Santa Ana Sucker P/A	Easting/Northing for 2013 Presence*	Prior Presence (Year)**
Los Ange	les River (LAR)					
12	Haines Creek Main Channel Outlet	9/5/12	N/A	Absent	-	-
13	Project No. 5215 Unit 1	8/30/12	N/A	Absent	1	-
San Gabr	iel River (SGR)					
39	Beatty Channel Outlet at SGR	9/14/12	N/A	Absent	_	_
Santa Cla	ra River (SCR)					
47	SCR (PD 1733 Unit 1)	8/29/12	Absent	N/A	-	-
51	Mint Canyon Main Channel Outlet (PD 1984) at SCR Main Channel	9/5/12	Absent	N/A	-	-
54	SCR Non-main Channel (PD 832)	9/6/12	Absent	N/A	_	-
55	SCR Channel (PDs 910, 832, 1758, and 1562 Unit 2)	9/6/12	Absent	N/A	_	_
56	SCR (PD 1562 Unit 2)	9/6/12	Absent	N/A	_	-
58	SCR (PD 374)	9/6/12	Absent	N/A	_	_

TABLE ES-1 SUMMARY OF 2013 RESULTS OF FOCUSED SURVEYS FOR THE LOS ANGELES COUNTY SOFT-BOTTOM CHANNELS

Reach Number	Reach Name/Tributary	Survey Date	Unarmored Threespine Stickleback P/A	Santa Ana Sucker P/A	Easting/Northing for 2013 Presence*	Prior Presence (Year)**
59	SCR (PD 374)	9/6/12	Absent	N/A	_	_
60	SCR (PD 1339 and 374)	9/6/12	Absent	N/A	_	-
61	SCR (PD 659)	9/5/12	Absent	N/A	_	_
62	SCR (PD 754)	8/29/12	Absent	N/A	-	_
63	Oak Avenue Rd Drainage (CDR 523.081)	8/29/12	Absent	N/A	-	-
64	Soledad Canyon Rd Drainage (CDR 523.071 D Outlet)	8/29/12	Absent	N/A	-	-
66	SCR (PD 1358)	8/29/12	Absent	N/A	-	_
67	Bouquet Canyon Upper (PDs 1201, 802, 700B and 625)	8/30/12	Absent	N/A	-	2005, 2006, 2007 and 2008
69	Bouquet Canyon Middle (PDs 722, 773, 1365, 1065 and 45)	8/30/12	Present	N/A	-	2005, 2006, 2007, 2008, 2012
70	Bouquet Canyon Lower (PDs 544 and 345)	8/30/12	Absent	N/A	-	-
71	SCR Main Channel (PD 1946)	8/29/12	Absent	N/A	-	-
79	South Fork SCR Valencia Blvd Bridge Stabilizer	8/29/12	Absent	N/A	-	-
80	South Fork SCR (PDs 1947 and 1946)	8/29/12	Absent	N/A	-	-
82	SCR Main Channel (PD 2278)	9/6/12	Absent	N/A	-	_
86	Violin Canyon Main Channel Outlet	8/29/12	Absent	N/A	_	_
87	Castaic Old Road Drain (CDR 525.021D) Outlet	8/30/12	Absent	N/A	_	-
97	Castaic Creek (PD 1982)	8/30/12	Absent	N/A	_	_
103	Bouquet Canyon Channel (PD 2225)	9/5/12	Absent	N/A	_	2005, 2006, 2007 and 2008
104	Castaic Creek (PD 2441 Unit 2)	9/5/12	Absent	N/A	_	-

TABLE ES-1 SUMMARY OF 2013 RESULTS OF FOCUSED SURVEYS FOR THE LOS ANGELES COUNTY SOFT-BOTTOM CHANNELS

Reach Number	Reach Name/Tributary	Survey Date	Unarmored Threespine Stickleback P/A	Santa Ana Sucker P/A	Easting/Northing for 2013 Presence*	Prior Presence (Year)**
105	San Francisquito Channel (PD 2456)	9/5/12	Absent	N/A	1	-
109	SCR south bank west of McBean Pkwy (MTD 1510)	9/5/12	Absent	N/A	1	2009, 2010 and 2011

N/A: Not applicable; no potential habitat for the species; therefore no survey conducted; P: present; A: absent.

^{*} Easting/Northing information is provided only for those reaches where unarmored threespine stickleback or Santa Ana sucker were present.

^{**} Sources: BonTerra; 2005, 2006, 2007, 2008, 2009, 2010, and 2011.

SECTION 1.0 INTRODUCTION

Since 2002, focused surveys and habitat assessments have been conducted on a regular basis for the LACDPW's soft-bottom channel maintenance program. The program includes both permitted and non-permitted soft-bottom channels reaches owned and managed by the LACDPW. The purpose of the surveys is to update baseline information on the occurrence or potential occurrence of Threatened or Endangered plant and wildlife species for permitted and non-permitted channel reaches.

Focused pre-clearing fish surveys for unarmored threespine stickleback and Santa Ana sucker are conducted annually. These surveys are performed by biologists with the necessary Scientific Permits in accordance with the requirements of the regulatory permits for maintenance of the soft-bottom channel reaches. The methods and results of these surveys are provided in this report. The survey information provides baseline data to support future regulatory agency permitting of the ongoing maintenance of these soft-bottom channel reaches. Appendix A includes a signed Surveyor Certificate Statement verifying the accuracy of the survey methods and results presented in this report.

1.1 ENVIRONMENTAL SETTING

1.1.1 REGIONAL SETTING

The topography in Los Angeles County is diverse, containing coastline, flatlands, mountains, and desert within approximately 4,000 square miles. Elevations within the County range from sea level to over 10,000 feet above mean sea level (msl). The climate ranges from mild near the coast to severe in the high mountains and in the desert. This variation in environments has created a unique and diverse collection of biological resources (England and Nelson 1976).

The San Gabriel Mountains are a prominent topographic feature that include a portion of the headwaters of the Santa Clara, Los Angeles, Rio Hondo, and San Gabriel Rivers, and are the source of streams that drain into the Antelope and Fremont Valleys. The San Gabriel Mountains rise 7,000 feet above msl from the Antelope and Santa Clarita Valleys, and exert considerable influence on the climate, hydrology, and ecology of the lands around them. The San Andreas and other numerous faults have fractured the mountains so that they erode at a rapid rate such that stream basins along the northern slope are generally characterized by steep headwaters and sloping alluvial beds on the adjacent flatlands (CRA et al. 2001).

There are 4 major rivers in Los Angeles County: the Los Angeles River is approximately 51 miles long (main stem) and drains 830 square miles; the Rio Hondo River is approximately 20 miles long (main stem) and drains 125 square miles; the San Gabriel River is approximately 59 miles long (main stem) and drains 350 square miles; and the Santa Clara River is approximately 75 miles long (main stem) and drains 1,616 square miles (LACDPW 2002). Numerous other streams also occur in Los Angeles County. Surface water in streams and rivers is generally only present during the winter and spring, in particular after storm events. Many storms do not generate sufficient runoff to sustain surface flow in all streams. In some areas, flows are supplemented with reclaimed water and agricultural and urban runoff. Particularly intense storms can result in flash floods or debris flows, which can carry large amounts of sediment, rocks, and debris to be deposited in the valley below (CRA et al. 2001).

The Los Angeles River system has been extensively channelized to provide flood protection as it passes through several cities on its way to the Pacific Ocean. The Los Angeles River tributaries include Bell Creek, Calabasas Creek, Burbank Western Channel, Pacoima Wash,

Tujunga Wash, Verdugo Wash, Arroyo Seco, Compton Creek, and the Rio Hondo River (LACDPW 2002). There are now over 400 miles of concrete-lined tributaries that feed into the main channel (LACDPW 2002). Approximately 47.9 miles of the 51-mile river is concrete-lined. The two stretches where the river is not lined (i.e., soft- or earthen-bottom channels) included the Sepulveda Flood Control Basin through the Glendale Narrows and south of Willow Street in Long Beach (LACDPW 2002). Reclaimed water enters the Los Angeles River at the Sepulveda Basin, where the Department of Water and Power releases as many as 75 million gallons of reclaimed water daily from the Donald C. Tillman Water Reclamation Plant.

The San Gabriel River begins in the Angeles National Forest and also flows through several cities on its way to the Pacific Ocean. The San Gabriel River tributaries include Walnut Creek, San Jose Creek, Coyote Creek, and numerous storm drains (LACDPW 2002). The headwaters of the San Gabriel River begin just north of Pasadena and northwest of Mount Wilson, where they flow through a steep canyon to Cogswell Reservoir. The west fork of the river then merges with the east fork and flows into the San Gabriel Reservoir. Below the reservoir, the main stem of the San Gabriel River flows through San Gabriel Canyon to Morris Reservoir. Below Morris Reservoir, the river flows through cities from Azusa to Seal Beach and empties into Long Beach Harbor.

The Santa Clara River is unique because it is the only major unchannelized river that drains the San Gabriel Mountains. The Santa Clara River is fed by five major tributaries: Sand Canyon, Mint Canyon, Bouquet Canyon, South Fork, and San Francisquito Canyon (LACDPW 2002). Further west, Castaic, Piru, Sespe, and Santa Paula Creeks join the river (CRA et al. 2001). The headwaters of the Santa Clara River are located near Acton, and the river runs approximately 100 miles to its outlet in the City of Ventura in Ventura County. Most development adjacent to the river is located in or near the City of Santa Clarita (LACDPW 2002).

1.1.2 LOCAL SETTING

In 2002, the LACDPW maintained 95 soft-bottom channel reaches located within the boundaries of the Los Angeles County Flood Control District, which consisted of 885.58 acres that required management. Since 2002, ten soft-bottom channel reaches have been removed due to development or ownership change, but several more have been added to the list. As of 2013, the LACDPW manages 106 channel reaches (1 thru 116) throughout Los Angeles County:

- Los Angeles River Watershed 29 channel reaches (includes Reach 27).
- Dominguez Channel 1 channel reach.
- Malibu Creek Watershed 9 channel reaches.
- San Gabriel River Watershed 8 channel reaches.
- Santa Clara River Watershed 56 channel reaches.
- Ballona Creek 1 channel reach.
- Antelope Valley 1 channel reach.
- Cerritos Channel 1 channel reach.

1.2 PROJECT

1.2.1 BACKGROUND

To effectively control flood waters from the mountainous watersheds surrounding the Los Angeles basin, the U.S. Army Corps of Engineers (USACE) and the Los Angeles County Flood Control District constructed concrete-bottom and earth-bottom channels leading from dams and debris basins located along the frontal slopes of the San Gabriel, Santa Monica, Verdugo, and Santa Susanna Mountains. Construction began in the 1930s. These channels, as a system, provide flood protection for Los Angeles County.

Channel maintenance activities have been performed regularly in Flood Control District channels for over 50 years. Originally constructed by the USACE, upon completion, most of the channel facilities were transferred to the Los Angeles County Flood Control District for cyclic maintenance. The USACE's maintenance guidelines require that debris, objectionable growth, shoals, and waste materials must not encroach on the invert. Excess materials that will not move readily with low flows must be removed. Measures must be taken to control objectionable growth by approved chemical or mechanical means.

The County formerly maintained channels clear of any vegetation, as required under the *Code of Federal Regulations* (33 CFR 208.10), until the California Department of Fish and Wildlife (CDFW) began requiring the County to clear vegetation on alternating sides of the channels each year. The USACE allowed limited clearing to occur between 1993 and 1995. Anticipated heavy rains during the 1997/1998 storm season caused by El Niño conditions resulted in a statewide need to remove vegetation and sediment from soft-bottom channels to restore their flood-carrying capacity. The LACDPW obtained all necessary permits to conduct this work in the 1997/1998 storm season and has continued the ongoing maintenance as approved by the permits.

1.2.2 PROJECT DESCRIPTION

Vegetative growth in a channel system reduces channel capacity. All soft-bottom channels were designed and constructed as relatively clean, unvegetated channels. As vegetation grows more densely, the roughness of the channel increases and the velocity of flows decrease, which corresponds to a loss in the channel's carrying capacity. The vegetation also traps some of the sediments being transported by flood flows which, when deposited, further reduce channel capacity. Studies have shown that increased vegetation and sediments in the channels result in reduced flow area with a concomitant decrease in flow velocity (LACDPW 1996). A loss of carrying capacity in the channels could cause flood flows to escape the channel systems and impact adjacent properties (LACDPW 1996).

Vegetation can also affect the structural integrity of bridges during a major storm event. Vegetation slows flood flows, which creates a backwater effect and increases water surface elevations upstream. Bridges are not normally designed to withstand the forces that result from significantly increased flood-water elevations. Additionally, increased flood depths upstream can result in flooding of adjacent properties and erosion of channel banks.

The LACDPW performs annual vegetation clearing in channels and minor grading to retrain channel flows consistent with the clearing limits established by the permitted maintenance plan (BonTerra 1999). This ongoing program is necessary to maintain the design capacities of the channels and to ensure the proper functioning of these facilities located within LACFCD boundaries.

Within each reach, the LACDPW vegetation clearing activities are conducted in the same areas (and acreage) that have been cleared annually since 1997. Biological impacts associated with the initial clearing of vegetation for maintenance activities in these channel reaches were previously mitigated through the maintenance and enhancement of 62.7 acres of riparian habitats at the Big Tujunga Wash Mitigation Bank site (BonTerra 1999).

Channel clearing activities are performed primarily by mechanical means, using heavy equipment (such as trucks, bulldozers, dump trucks, and loaders), as well as other specialized equipment designed for this type of work. Hand clearing is conducted in areas where mechanical equipment cannot be used or where important biological resources exist nearby. Herbicides approved by regulatory agencies are applied, as necessary, to eradicate invasive and/or non-native vegetation including, but not limited to, giant reed (*Arundo donax*) and castor bean (*Ricinus communis*).

The channel clearing activities are performed under an existing Maintenance Plan approved by the Los Angeles Regional Water Quality Control Board (RWQCB) and USACE and are modified by the CDFW under the existing Streambed Alteration Agreement between the CDFW and the LACDPW. BonTerra Psomas has reviewed the Maintenance Plan and has extensive knowledge of channel clearing activities in all channel reaches, having worked with the LACDPW since 1997 to provide biological monitoring of flood-control channel maintenance work. Pre-clearing and post-clearing photos have been taken every year to document the biological resources in these channel reaches in compliance with the mitigation requirements of existing permits from the USACE, RWQCB, and CDFW.

1.3 SPECIAL STATUS SPECIES BACKGROUND

In order to comply fully with the regulatory permits issued to the LACDPW, surveys are performed for a variety of special status species at soft-bottom channel reaches where suitable or potentially suitable habitat has been identified. These permits include required annual preclearing surveys for the federally and California State-listed Endangered, unarmored threespine stickleback and federally listed Threatened and California State-listed Species of Special Concern, Santa Ana sucker. Table 1 below shows the federal and State status of these two species.

TABLE 1
STATUS OF SPECIES ADDRESSED

	Status	
Species	USFWS	CDFW
Gasterosteus aculeatus williamsoni Unarmored threespine stickleback	FE	SE
Catostomus santaanae Santa Ana sucker	FE	SSC
U.S. Fish and Wildlife Service (USFWS) FE Federally Endangered	•	
California Department of Fish and Wildlife (CDFW) SE State Endangered SSC State Species of Special Concern		

1.3.1 UNARMORED THREESPINE STICKLEBACK

In California, the presence of 'threespine stickleback' (*Gasterosteus aculeatus*) in most coastal drainages is well documented going back to 1800s (e.g., Girard 1854). At one time naturally occurring sticklebacks were abundant throughout the Los Angeles River Basin (Culver and

Hubbs 1917) but are no longer found, presumably due to increased urbanization in the region (Baskin and Bell 1976; Irwin and Soltz 1982).

Miller and Hubbs (1969) recognized three subspecies in California based mainly on lateral plate polymorphism (different number of bony plates found on subspecies), and subsequent studies confirmed this (Bell 1975, 1976, 1981):

- 1. Fully armored threespine stickleback (*Gasterosteus aculeatus*) is a typically anadromous (marine and fresh water) subspecies with a complete row of lateral plates extending from the anterior portion of the body to the caudal peduncle (fully armored),
- 2. Partially armored threespine stickleback (*Gasterosteus aculeatus microcephalus*) is a freshwater resident subspecies with the lateral plates restricted to the anterior portion of the body (partially armored), and
- 3. Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) is a freshwater subspecies that lacks lateral plates (unarmored) and has a limited distribution within Southern California.

Unarmored threespine stickleback is a fully protected species in California. This subspecies was listed by the USFWS as an Endangered species in 1970, and is currently restricted to three areas: the upper Santa Clara River and its tributaries in Los Angeles County; San Antonio Creek on Vandenberg Air Force Base in Santa Barbara County; and the Shay Creek vicinity (Shay Pond, Sugarloaf Pond, Juniper Springs, Motorcycle Pond, Shay Creek, Wiebe Pond, and Baldwin Lake) in San Bernardino County.

The <u>California Natural Diversity Database</u> (CNDDB) contains several records of unarmored threespine stickleback from the vicinity of the survey areas (CDFW 2012):

- A section of the Santa Clara River at Lang Station Road and upstream in Arrastre Canyon, Acton.
- Agua Dulce Creek, 0.5 mile downstream from State Route (SR) 14 and west of Agua Dulce Road, a Santa Clara River tributary north of Soledad Canyon.
- A section of Santa Clara river behind Greenbrier Mobile Estates (near Reach 64) in Santa Clarita.
- Santa Clara River near McBean Bridge in Valencia.
- Bouquet Canyon Creek at Texas Canyon Road in Santa Clarita.
- Castaic creek, 0.8 mile north of the SR-126 and Interstate (I) 5.

Unarmored threespine stickleback is threatened by habitat degradation from urbanization, channelization, and lower water quality. The introduction of many non-native predators and competitors into the Santa Clara River has also threatened unarmored threespine stickleback populations. Further, since 1990, a number of oil spills indicate the real threat posed by the pipeline and transportation corridors along and across the Santa Clara River.

Unarmored threespine stickleback is a small, primarily annual fish requiring shallow, slow, marginal stream flows with abundant aquatic vegetation for cover. They can be found throughout a given stream of suitable habitat, but tend to mill in areas of slow flow or standing water, such as within eddies behind obstructions or in edgewater where vegetation slows the

stream flow. Under optimal conditions, several hundred unarmored threespine stickleback can exist within approximately ten meters of a stream. While strong storm flows can severely reduce localized populations, as the stream stabilizes in the spring, unarmored threespine stickleback can quickly recover. Moreover, Unarmored threespine stickleback use backwater habitats in the Santa Clara River as refugia during storm events.

Male sticklebacks develop a distinctive nuptial coloration – a red throat, blue sides and blue eyes – during the breeding season and defend territories adjacent to vegetation where they construct a nest. Males attract females to the nest, each of which can spawn between 50 and 300 eggs. After courtship, males defend the eggs and care for them while they develop. The eggs take approximately 6 to 8 days to hatch at 64 to 68 degrees Fahrenheit (°F). The fry remain in the nest for the first couple days, during which time the male continues to guard them (Wootton 1976; Haglund 1981).

Two features of unarmored threespine stickleback habitat appear to be essential for the survival of fry and juveniles; (1) slow flowing, clear water for the proper development of the eggs, with any form of pollution or small amounts of turbidity interfering with normal development and (2) aquatic vegetation along the edge of the shoreline to supply cover and microscopic food organisms for the fry (Ono et al. 1983). While unarmored threespine stickleback rely upon a wide variety of foods, they prefer insects and some snails in their diet.

Critical habitat is not specifically delineated in the Unarmored Threespine Stickleback Recovery Plan (USFWS 1985), but is defined as: (1) the specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Endangered Species Act of 1973 as amended, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection and (2) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species (45 Federal Register 76012-76015). "Conservation" means the use of all methods and procedures that are necessary to bring an Endangered or a Threatened species to the point at which listing under the Act is no longer necessary (USFWS 1998).

Three Essential Habitat zones within the Santa Clara River watershed are described under the Unarmored Threespine Stickleback Revised Recovery Plan (USFWS 1985):

- Del Valle Zone. An area of land and water with the following components (San Bernardino meridian): Santa Clara River within T4N, R16W and R17W, beginning at its confluence with San Martinez Grande Canyon, at a point 0.9 of a mile (1.5 kilometers) southwest of Del Valle settlement, and extending upstream approximately 5.6 miles (8.8 kilometers) to the Interstate Highway 5 Bridge.
- 2. San Francisquito Creek Zone. An area of land and water with the following components (San Bemardino meridian): San Francisquito Canyon watercourse, within T5N, R16W and T6N, R15W, beginning at a point where the Angeles National Forest boundary intersects the San Francisquito Canyon watercourse, approximately 2.5 miles southwest of San Francisquito Powerhouse No. 2, and extending upstream in San Francisquito Canyon approximately 8.4 miles (13.5 kilometers) to San Francisquito Powerhouse No. 1, near its junction with Clearwater Canyon.
- 3. Soledad Canyon Zone. An area of land and water in Los Angeles County, with the following components (San Bernardino meridian): Santa Clara River within T4N, R13W, and R14W, beginning at a point 1.4 miles (2.3 kilometers) upstream in Soledad Canyon from the community of Lang, at the downstream end of the area called River's End Park, at 34"26' 7" N, 118"21' 51" W, thence extending upstream

approximately 8.5 miles (13.7 kilometers) to its confluence with Arrastre Canyon, at a point located about 0.6 of a mile (1 kilometer) southwest of Los Angeles County Rehabilitation Camp, thence upstream in Arrastre Canyon approximately 0.8 of a mile (1.4 kilometers) to 34" 26' 7" N, 118"11' 51" W.

1.3.2 SANTA ANA SUCKER

Santa Ana sucker is a federally listed Threatened species and a California Species of Special Concern. Its historic range consisted of the Los Angeles, San Gabriel, and Santa Ana River systems; only these populations within its historic range are federally protected.

The CNDDB contains several records of Santa Ana sucker from the vicinity of the survey area (CDFW 2012):

- East Fork San Gabriel River on east side of Camp Oak Grove.
- East Fork San Gabriel River at Coyote Flat.
- East Fork San Gabriel River about 0.7 miles north of Coyote Flat.
- Cattle Canyon/Creek near junction with Dime Canyon.
- North Fork San Gabriel and West Fork San Gabriel River, approximately
 .5 miles below mouth of East Fork and Bear Creek in the Angeles Forest.
- Hasley Canyon approximately 2 miles east of Val Verde.
- Tujunga Creek at Foothill Bridge, downstream to junction with Haines Creek.
- Haines Creek and outlets from ponds north of creek.
- Castaic Creek, upstream of Highway 126.
- Fish Canyon, 0.7 miles downstream from confluence of Fern Canyon.
- Santa Clara River, from Lang to Arrastre Canyon.

Santa Ana sucker is found in small, shallow streams with flows that run from slow to swift. It is most abundant where water is clear and unpolluted, although it can withstand seasonal turbidity. It is often associated with bottom materials of boulders, gravel, and cobble where there are growths of filamentous algae, though it is also occasionally found on sand or mud substrates (Thompson et al. 2010). Although Santa Ana sucker has generalized stream habitat requirements, it is intolerant of polluted or highly modified streams (Moyle 2001). It is presumed that the majority of its diet consists of algae, including lithic diatoms, and detritus that it scrapes from rock surfaces, as well as occasional aquatic insect larvae (Haglund, *pers comm.*).

Adult Santa Ana sucker rarely exceed a standard length of eight inches (measured from snout tip to anterior of the caudal fin [tail fin]). It possesses a broad mouth with notches at the junction of the upper and lower lips, and the median notch on the lower lip is less well defined. Its body coloration is silver on the ventral (belly/underside) surface and darker with irregular blotches on the dorsal (back/top) surface. Its scale pattern has longitudinal lateral (along the length of their body) striping. The interradial membrane (membrane between the spines) of the caudal fin is pigmented, and the anal and pelvic fins normally lack pigment (Moyle 2001).

Santa Ana sucker are relatively short-lived; they become reproductively mature by the first year and spawn during the first and second years. Most Santa Ana sucker do not survive past the second year, although a few live three to four years. There is no sexual dimorphism

(appearances between males and females are distinguishable), although reproductive males develop breeding tubercles (small bumps) over most of the body (Moyle 2001).

Santa Ana sucker spawning occurs from April until early July, but peaks in late May and early June. Santa Ana sucker spawn over gravel beds in flowing water where the female deposits the eggs in fine gravel substrate. The eggs hatch within 36 hours at 55.5 degrees Fahrenheit (°F), and the fry (fish hatchlings) congregate in shallow, slow-moving waters along the stream margins in water depths ranging from 1 to 5.5 inches, often over very soft sandy or muddy substrates. Edgewater habitat is probably used by fry because (1) it typically contains fewer predatory fish and (2) shallow water is warmer and probably allows the suckers to grow more quickly (USFWS 2010).

Santa Ana sucker are currently threatened by water diversions; alteration of stream channels; changes in the watershed that result in erosion and debris flows; pollution; and predation by non-native fishes. The primary cause for the extirpation of the Santa Ana sucker from lowland reaches of the Los Angeles, San Gabriel, and Santa Ana Rivers is most likely due to increased urbanization (Swift 1993).

On January 4, 2005, the USFWS published a Final Rule designating 8,305 acres of critical habitat for Santa Ana sucker (USFWS 2010). Two areas were designated in Los Angeles County: one along the San Gabriel River (Unit 2) and the other along Big Tujunga Creek (Unit 3). This designation did not include habitat for the species in Orange, Riverside, or San Bernardino Counties. Following lawsuits, the USFWS proposed a Revised Critical Habitat on December 9, 2009, adding habitat along the Santa Ana River in Orange, Riverside, and San Bernardino Counties to critical habitat for the species (USFWS 2010). This increased the critical habitat designation to 9,331 acres. On December 14, 2010, the USFWS published the Final Rule formalizing the Revised Critical Habitat (USFWS 2010).

It should be noted that, while the survey areas for the Los Angeles River (13 and 14) are within the 2010 revised critical habitat for Santa Ana sucker, the survey area for the San Gabriel River (39) is not within the 2010 revised critical habitat for Santa Ana sucker.

SECTION 2.0 SURVEY METHODS

Focused surveys for unarmored threespine stickleback and Santa Ana sucker were conducted according to USFWS protocols. The biologists conducted the surveys at the most appropriate time of day to ensure maximum opportunity to observe the species.

2.1 UNARMORED THREESPINE STICKLEBACK AND SANTA ANA SUCKER

The initial studies conducted in 2002 included a background literature review and habitat assessment for each of the soft-bottom channel reaches that represented potentially suitable unarmored threespine stickleback habitat. The literature review included the documentation of relevant literature on the presence of the unarmored threespine stickleback within each reach including areas both upstream and downstream. This included review of *Federal Register* listings, protocols, and species data provided by the USFWS and the CNDDB; consultation with qualified experts familiar with the distribution and natural history of unarmored threespine stickleback; and review of unpublished biological resource letter reports and assessments conducted in the region.

Unarmored Threespine Stickleback: Focused surveys for unarmored threespine stickleback were conducted in 2013 at 27 channel reaches (see Exhibit 1):

- Santa Clara River Reaches 47, 51, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 66, 71, 82, 105, and 109.
- Bouquet Canyon Creek Reaches 67, 69, 70, and 103.
- South Fork Santa Clara River Reaches 79 and 80 at the confluence of the Santa Clara and South Fork Santa Clara Rivers.
- Castaic Creek Reaches 86, 87, 97 and 104.

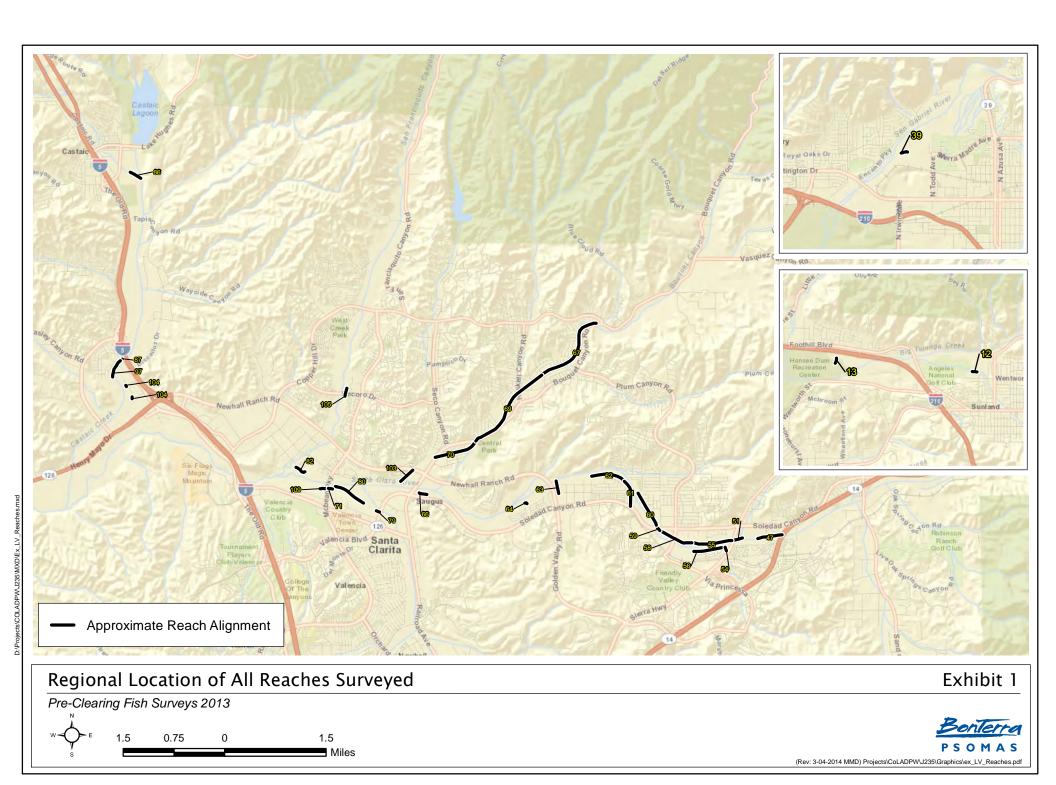
These channel reaches may provide suitable breeding habitat for unarmored threespine stickleback during the spring and summer season when water is present.

Santa Ana Sucker: Focused surveys for Santa Ana sucker were conducted in 2013 in the San Gabriel River and Los Angeles River drainages at three channel reaches (see Exhibit 1):

- San Gabriel Reach 39 (Beatty Channel Outlet at San Gabriel River).
- Los Angeles River Reaches 12 (Haines Canyon Main Channel Outlet) and 13 (Project No. 5215 Unit 1, within the Tujunga Wash Watershed).

These channel reaches may provide suitable breeding habitat for Santa Ana sucker during the spring and summer season when water is present.

Surveys were conducted by Consulting Fisheries Biologist Dr. Jonathan Baskin (TE 781-377-5), BonTerra Psomas Fisheries Biologists, Dr. Carl Demetropoulos (TE-72044A-0), Samuel Stewart, Jonas Winbolt and Nathan Moffett. Prior to the surveys, Dr. Demetropoulos consulted with Chris Dellith from the USFWS and John O'Brien from the CDFW for approval to conduct the surveys for special status fish species in the survey area. Survey methods included dip netting, seining, and snorkeling depending on the location/stream morphology within the survey area and the species being surveyed



Surveys followed the current presence/absence protocol for both unarmored threespine stickleback and Santa Ana sucker and were conducted from August 29 to September 14, 2012. During surveys, all accessible areas of the creeks were surveyed using dip nets and seine nets. While seining, care was taken to avoid algal mats and dense vegetation in the creek to avoid impacts on refugia for potential young fish.

Netting

Dip netting and seining methods were used in shallow water down to depths of approximately three feet for Santa Ana sucker only. Seining was conducted using a 20-foot by 4-foot deep nylon knotless delta weave bagged seine with ¼-inch mesh. Captured fish were immediately transferred into a container of clean water taken from the creek and were visually identified.

SECTION 3.0 SURVEY RESULTS

The following section presents the results of the biological surveys conducted within each channel reach. Channel reaches are grouped by watershed and include Los Angeles River, San Gabriel River, and the Santa Clara River. Table ES-1 above summarizes the results of these 2012 surveys.

3.1 LOS ANGELES RIVER AREA

3.1.1 REACH 12 - HAINES CANYON MAIN CHANNEL OUTLET

Project Location

Reach 12, Haines Canyon Main Channel Outlet, is located within the Tujunga Wash Watershed, approximately one mile northwest of the Mount Gleason Avenue and Foothill Boulevard intersection, in the community of Sunland in the City of Los Angeles (Exhibit 1). The limits of Reach 12 are approximately 791 feet downstream of Wentworth Street to approximately 1,228 feet downstream of Wentworth Street. Reach 12 is 437 feet in total length. The reach is found on the U.S. Geological Survey's (USGS') Sunland 7.5-minute quadrangle map (Also, refer to Thomas Guide, Los Angeles County, page 503-F2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 2
REACH 12 – HAINES CANYON MAIN CHANNEL OUTLET

Survey Type	Survey Date	Surveying Biologists
Focused survey for the Santa Ana sucker	September 5, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin Nathan Moffett

Santa Ana sucker was not observed in Reach 12 during this survey, but arroyo chub, a California Species of Special Concern, was present. Water was abundant but appeared to be mostly from urban runoff and was not considered to be of high enough quality for Santa Ana sucker.

3.1.2 REACH 13 - PROJECT NO. 5215 UNIT 1

Project Location

Reach 13, Project No. 5215 Unit 1, is located within the Tujunga Wash Watershed, approximately one mile northwest of the Foothill Freeway (I-210) and Wentworth Street intersection in the community of Shadow Hills in the City of Los Angeles (Exhibit 1). The limits of Reach 13 are between approximately 1,030 feet downstream of Foothill Boulevard and approximately 1,535 feet downstream of Foothill Boulevard. Reach 13 is 537 feet in total length. The reach is found on the Sunland USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 503-B2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 3
REACH 13 – PROJECT NO. 5215 UNIT 1

Survey Type	Survey Date	Surveying Biologists	
Focused survey for the Santa Ana sucker	August 30, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin	

Santa Ana sucker was not observed in Reach 13 during this survey. No water was present in the reach.

3.2 SAN GABRIEL RIVER AREA

3.2.1 REACH 39 – BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER

Project Location

Reach 39, Beatty Channel Outlet at San Gabriel River, is located within the San Gabriel River watershed, approximately 0.8 mile north of the Foothill Boulevard and Irwindale Avenue intersection in the City of Azusa (Exhibit 1). The limits of Reach 39 are approximately 2,323 feet downstream of Todd Avenue to approximately 2,415 feet downstream of Todd Avenue. Reach 39 is 145 feet in total length. The reach is found on the USGS Azusa 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 568-F4).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 4
REACH 39 – BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER

Survey Type	Survey Date	Surveying Biologist
Focused survey for the Santa Ana sucker	September 14, 2012	Dr. Carl Demetropoulos Nathan Moffett

Santa Ana sucker was not observed in Reach 39 during this survey. While some water was present in the reach, it was shallow (< 9 inches deep) and was not determined to be suitable for Santa Ana sucker.

3.3 SANTA CLARA RIVER AREA

3.3.1 REACH 47 – SANTA CLARA RIVER (PD 1733 UNIT 1)

Project Location

Reach 47, Santa Clara River (PD 1733 unit 1), is located within the Santa Clara River Watershed, approximately 1.5 miles southwest of the SR-14 and Sand Canyon Road intersection in the City of Santa Clarita (Exhibit 1). The limits of Reach 47 are the downstream edge of SR-14 to approximately 1,875 feet downstream of SR-14. Reach 47 is approximately 1,875 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4552- A3 to 4551-J3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 5
REACH 47 – SANTA CLARA RIVER (PD 1733 UNIT 1)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 47 during this survey. No water was present in the reach.

3.3.2 REACH 51 - MINT CANYON MAIN CHANNEL OUTLET (PD 1984)/SANTA CLARA RIVER - MAIN CHANNEL

Project Location

Reach 51, Mint Canyon Main Channel Outlet (PD 1984)/Santa Clara River – Main Channel, is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 51 are approximately 1,044 feet downstream from Soledad Canyon Road to Soledad Canyon Road on the downstream side of Sierra Highway. Reach 51 is approximately 932 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4551 G3/G4 to 4552 B2/B3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 6
REACH 51 – MINT CANYON MAIN CHANNEL OUTLET (PD 1984) / SANTA
CLARA RIVER – MAIN CHANNEL

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	September 5, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 51 during this survey. Very little water was present in the reach.

3.3.3 REACH 54 - SANTA CLARA RIVER NON-MAIN CHANNEL (PD 832) MAIN CHANNEL OUTLET

Project Location

Reach 54, Santa Clara river non-main channel (PD 832) main channel outlet is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 54 are approximately 821 feet downstream of Sierra Highway to 1,098 feet downstream of Sierra Highway. Reach 54 is approximately 298 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4551 H3 to H4).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 7
REACH 54 – SANTA CLARA RIVER NON-MAIN CHANNEL (PD 832)
MAIN CHANNEL OUTLET

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 54 during this survey. Very little water was present in the reach and it appeared to come from urban runoff.

3.3.4 REACH 55 - SANTA CLARA RIVER CHANNEL (PDS 910, 832, 1758, & 1562 UNIT 2)

Project Location

Reach 55, Santa Clara River Channel (PDs 910, 832, 1758, and 1562 Unit 2), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 55 are from the downstream edge of Sierra Highway to approximately 3,049 feet downstream of Sierra Highway. Reach 55 is approximately 3,049 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4551-H3 to G4).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist. See Exhibits 2a and 2b for photo documentation of select reaches.

TABLE 8
REACH 55 – SANTA CLARA RIVER CHANNEL
(PDS 910, 832, 1758, AND 1562 UNIT 2)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Jonas Winbolt



August 14, 2013. View of channel upstream of Santa Clara River Non-Main Channel - Reach 54.



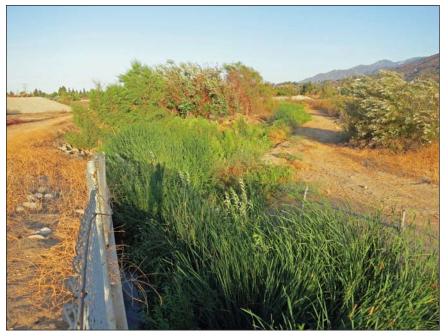
August 30, 2013. View of water downstream of Urbandale Ave in Bouquet Canyon Middle Channel - Reach 69.

Site Photographs

Exhibit 2a

Pre-Clearing Fish Surveys 2013





August 26, 2013. View of Beatty Channel Outlet - Reach 39.



September 6, 2013. View of Haines Canyon Main Channel Outlet - Reach 12.

Site Photographs

Exhibit 2b

Pre-Clearing Fish Surveys 2013



Unarmored threespine stickleback was not observed in Reach 55 during this survey. No water was present in this reach.

3.3.5 REACH 56 - SANTA CLARA RIVER CHANNEL (PD 1562 UNIT 2)

Project Location

Reach 56, Santa Clara River Main Channel (PD 1562 unit 2), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 56 are approximately 3,049 feet downstream of Sierra Highway to approximately 3,501 feet downstream of Sierra Highway. Reach 56 is 452 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4551- G3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 9
REACH 56 – SANTA CLARA RIVER CHANNEL (PD 1562 UNIT 2)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 56 during this survey. No water was present in this reach.

3.3.6 REACH 58 – SANTA CLARA MAIN RIVER CHANNEL (PD 374)

Project Location

Reach 58, Santa Clara River Main Channel (PD 374), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 58 are from a point approximately 2,114 feet upstream of the Old Soledad Canyon Road Bridge to the upstream edge of Soledad Canyon Road Bridge. Reach 58 is 2,064 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4551-G3 to F3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 10
REACH 58 – SANTA CLARA RIVER CHANNEL (PD 374)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 58 during this survey. No water was present in this reach.

3.3.7 REACH 59 - SANTA CLARA RIVER MAIN CHANNEL (PD 374)

Project Location

Reach 59, Santa Clara River Main Channel (PD 374), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 59 are the upstream side of the Old Soledad Canyon Road Bridge to the downstream side of the new Soledad Canyon Road Bridge. Reach 59 is 640 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4551-F3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 11
REACH 59 – SANTA CLARA RIVER CHANNEL (PD 374)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 59 during this survey. No water was present in this reach.

3.3.8 REACH 60 - SANTA CLARA RIVER MAIN CHANNEL (PD 1339 AND 374)

Project Location

Reach 60, Santa Clara River Main Channel (PD 1339 & 374), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 60 are the downstream side of the new Soledad Canyon Road Bridge to its confluence with PD 313, which is downstream of Newhouse Street. Reach 60 is 3,258 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4551-F3 to E2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 12
REACH 60 – SANTA CLARA RIVER CHANNEL (PD 1339 AND 374)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 60 during this survey. No water was present in this reach.

3.3.9 REACH 61 - SANTA CLARA RIVER (PD 659)

Project Location

Reach 61, Santa Clara River (PD 659), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 61 are the downstream side of the new Soledad Canyon Road Bridge to a point approximately 1,634 feet further downstream. Reach 61 is 1,634 feet in total length. The reach is found on the Mint Canyon USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4551-E2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 13
REACH 61 – SANTA CLARA RIVER (PD 659)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 5, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 61 during this survey. No water was present in this reach.

3.3.10 REACH 62 - SANTA CLARA RIVER (PD 754)

Project Location

Reach 62, Santa Clara River (PD 754), is located within the Santa Clara Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 62 are approximately 1,634 feet downstream of the new Soledad Canyon Road Bridge to Honby Avenue. Reach 62 is 3,032 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4551-E2 – D2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 14
REACH 62 – SANTA CLARA RIVER (PD 754)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 62 during this survey. While some water was present in this reach, it was outside the zone of disturbance.

3.3.11 REACH 63 – OAK AVE ROAD DRAINAGE (CDR 523.081)

Project Location

Reach 63, Oak Avenue Road Drainage (CDR 523.081), is located within the Santa Clara Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 63 are approximately 1,400 feet north of Soledad Canyon Road at the Southern California Edison (SCE) lines to 2,300 feet north of Soledad Canyon Road at the SCE lines. Reach 63 is 900 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4551 C2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 15
REACH 63 – OAK AVE ROAD DRAINAGE (CDR 523.081)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 63 during this survey. While some water was present in this reach (< 8 inches) it appeared to come from urban runoff and would not be suitable for this species.

3.3.12 REACH 64 – SOLEDAD CANYON ROAD DRAINAGE (CDR 523.071D OUTLET)

Project Location

Reach 64, Soledad Canyon Road Drainage (CDR 523.071 D Outlet), is located within the Santa Clara Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 64 are the east side of the Los Angeles Aqueduct north of Soledad Canyon Road, approximately 980 feet to 1,250 feet northwest of Soledad Canyon Road and the Los Angeles Aqueduct. Reach 64 is 577 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4551 B2 to B3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 16
REACH 64 – SOLEDAD CANYON ROAD DRAINAGE
(CDR 523.071D OUTLET)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 64 during this survey. While some water was present in this reach (< 5 inches) and water quality appeared to be good, no fish were found.

3.3.13 Reach 66 – Santa Clara River (PD 1538)

Project Location

Reach 66, Santa Clara River (PD 1358), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 66 are approximately 706 feet upstream of Bouquet Canyon Road to approximately 1,417 feet upstream of Bouquet Canyon Road. Reach 66 is 711 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-H2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 17
REACH 66 – SANTA CLARA RIVER (PD 1538)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 66 during this survey. While some water was present in this reach (<6 inches), no fish were found.

3.3.14 REACH 67 - BOUQUET CANYON CREEK UPPER (PDS 1201, 802, 700B, AND 625B)

Project Location

Reach 67, Bouquet Canyon Upper (PDs 1201, 802, 700B, and 625), is located within the Santa Clara River Watershed in the City of Santa Clarita and the Bouquet Canyon community in unincorporated Los Angeles County (Exhibit 1). The limits of Reach 67 are approximately 63 feet downstream of Hob Avenue to approximately 153 feet upstream of Urbandale Avenue. Reach 67 is 6,176 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute guadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4461-D1 to C6).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 18
REACH 67 – BOUQUET CANYON CREEK UPPER (PDS 1201, 802, 700B, & 625B)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 30, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 67 during this survey. While some water was present in this reach (< 12 inches) and water quality appeared to be good, no fish were found. However, unarmored threespine stickleback were previously found in this reach in 2005, 2006, 2007 and 2008 (BonTerra 2005, 2006, 2007, 2008).

3.3.15 REACH 69 - BOUQUET CANYON CREEK MIDDLE (PDS 772, 773, 1365, 1065, AND 451)

Project Location

Reach 69, Bouquet Canyon Middle (PDs 722, 773, 1365, 1065, and 45), is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 69 are approximately 122 feet downstream of Urbandale Avenue to approximately 54 feet downstream of the middle crossing of Bouquet Canyon Road. Reach 69 is 6,812 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4461-C6 to A7).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 19
REACH 69 – BOUQUET CANYON CREEK MIDDLE
(PDS 772, 773, 1365, 1065, AND 451)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 30, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 69 during this survey. The cement constructed riprap plunge pool where unarmored threespine stickleback were observed in 2012 was mostly filled in with sediment and water quality conditions were considered too poor for the species. Unarmored threespine stickleback were previously found in this reach in 2005, 2006, 2007 and 2008 (BonTerra 2005, 2006, 2007, 2008).

3.3.16 REACH 70 - BOUQUET CANYON CREEK LOWER (PDS 544 AND 345)

Project Location

Reach 70, Bouquet Canyon Lower (PDs 544 and 345) is located within the Santa Clara River Watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 70 are 2,866 feet upstream of the lower crossing with Bouquet Canyon Road to the downstream side of the lower crossing with Bouquet Canyon Road. Reach 70 is 2,954 feet in total length. The reach is found on the Newhall USGS 7.5 x 15-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, pages 4550-J1 to H1).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 20
REACH 70 – BOUQUET CANYON CREEK LOWER (PDS 544 AND 345)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 30, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 70 during this survey. While some water was present in this reach (< 10 inches), and water quality appeared to be marginal to good, no fish were found.

3.3.17 REACH 71 - SANTA CLARA RIVER MAIN CHANNEL (PD 1946)

Project Location

Reach 71, Santa Clara River Main Channel (PD 1946), is located within the Santa Clara River-South Fork watershed in the City of Santa Clarita (Exhibit 1). The limits of Reach 71 are approximately 276 feet upstream of McBean Parkway (at the confluence with the South Fork of the Santa Clara River) to the downstream edge of McBean Parkway. Reach 71 is 346 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-E2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and surveying biologist.

TABLE 21
REACH 71 – SANTA CLARA RIVER MAIN CHANNEL (PD 1946)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 71 during this survey. No water was present in this reach.

3.3.18 REACH 79 - SOUTH FORK - SANTA CLARA RIVER (VALENCIA BOULEVARD BRIDGE STABILIZER)

Project Location

Reach 79, South Fork – Santa Clara River (Valencia Boulevard Bridge Stabilizer), is located within the Santa Clara River-South Fork Watershed (Exhibit 1). The limits of Reach 79 are the downstream edge of Valencia Boulevard to approximately 167 feet downstream of Valencia Boulevard. Reach 79 is 167 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-G3).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 22 REACH 79 – SOUTH FORK – SANTA CLARA RIVER (VALENCIA BOULEVARD BRIDGE STABILIZER)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 79 during this survey. While some water was present in this reach (< 8 inches), it appeared to come from residential and/or commercial sources and be of marginal quality.

3.3.19 REACH 80 - SOUTH FORK - SANTA CLARA RIVER (PDS 1947 AND 1946)

Project Location

Reach 80, South Fork-Santa Clara River (PDs 1947 and 1946), is located in the Santa Clara River-South Fork Watershed (Exhibit 1). The limits of Reach 80 are approximately 3,080 feet upstream of McBean Parkway to approximately 276 feet upstream of McBean Parkway and the confluence with Santa Clara River. Reach 80 is 2,804 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-F2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 23
REACH 80 – SOUTH FORK – SANTA CLARA RIVER (PDS 1947 AND 1946)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 80 during this survey. No water was present in this reach.

3.3.20 REACH 82 – SANTA CLARA RIVER MAIN CHANNEL (PD 2278)

Project Location

Reach 82, Santa Clara River Main Channel (PD 2278), is located in the Santa Clara River Watershed, approximately 0.75 mile east of the I-5 and Magic Mountain Parkway intersection in the City of Santa Clarita (Exhibit 1). The upstream limits of Reach 82 are approximately 740 feet southeast of the intersection of Hopkins Avenue and Rockefeller Avenue to just south of the intersection of Hopkins Avenue and Rockefeller Avenue. Reach 82 is 865 feet in total length.

The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-D1).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 24
REACH 82 – SANTA CLARA RIVER MAIN CHANNEL (PD 2278)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 6, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 82 during this survey. While some water was present in this reach (< 10 inches), it appeared to come from residential and/or commercial sources and be of marginal quality.

3.3.21 REACH 86 - VIOLIN CANYON MAIN CHANNEL OUTLET

Project Location

Reach 86, Violin Canyon Main Channel Outlet, is located in the Castaic Creek Watershed in the community of Castaic in unincorporated Los Angeles County, approximately 0.5 mile southeast of the I-5 and Lake Hughes Road intersection (Exhibit 1). The limits of Reach 86 are approximately 1,021 feet downstream of Ridge Route Road to the confluence with Castaic Creek. Reach 86 is 946 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4369-J7).

Survey Results

The table below summarizes the type of survey completed, the survey dates, and the surveying biologist.

TABLE 25
REACH 86 – VIOLIN CANYON MAIN CHANNEL OUTLET

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Jonas Winbolt

Unarmored threespine stickleback was not observed in Reach 86 during this survey. While some water was present in this reach (< 4 inches), it appeared to come from residential and/or commercial sources and to be of marginal quality.

3.3.22 REACH 87 - CASTAIC-OLD ROAD DRAINAGE (CDR 525.021D) OUTLET

Project Location

Reach 87, Castaic – Old Road Drainage (CDR 525.021D) Outlet, is located in the Castaic Creek Watershed, approximately one mile northwest of the I-5 and Henry Mayo Drive (SR-126) in the Castaic Junction community of unincorporated Los Angeles County (Exhibit 1). The limits

of Reach 87 are approximately 610 feet downstream of the intersection of Hasley Canyon Road and The Old Road to the confluence with Castaic Creek. Reach 87 is 240 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4459-H5).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 26
REACH 87 – CASTAIC-OLD ROAD DRAINAGE (CDR 525.021D) OUTLET

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 87 during this survey. While some water was present in this reach (< 2 inches), it appeared to come from residential and/or commercial sources and be of marginal quality.

3.3.23 REACH 97 - CASTAIC CREEK (PD 1982)

Project Location

Reach 97, Castaic Creek (PD 1982), is located within the Castaic Creek Watershed in the Castaic Junction community of unincorporated Los Angeles County (Exhibit 1). The limits of Reach 97 are approximately 300 feet downstream to 2,300 feet downstream of The Old Road. Reach 97 is 2,000 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle maps (Refer to Thomas Guide, Los Angeles County, page 4459-H5 to 4459-H6).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 27
REACH 97 – CASTAIC CREEK (PD 1982)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	August 29, 2012	Dr. Carl Demetropoulos Dr. Jonathan Baskin Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 97 during this survey. While water was present in this reach (< 26 inches), it appeared to come mainly from residential and/or commercial sources and be of poor quality.

3.3.24 REACH 103 - BOUQUET CANYON CHANNEL (PD 2225)

Project Location

Reach 103, Bouquet Canyon Channel (PD 2225), is located within the Santa Clara River Watershed (Exhibit 1). The limits of Reach 103 are approximately 173 feet downstream of the centerline of Newhall Ranch Road (beginning of Grouted Stone Toe) to the Metropolitan Water District Fee Right-of-Way on the right bank and the embankment turn at the Santa Clara River on the left bank. Reach 103 is 1,824 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-H1, 4550-H2, and 4550-G2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologists.

TABLE 28
REACH 103 – BOUQUET CANYON CHANNEL (PD 2225)

Survey Type	Survey Date	Surveying Biologists
Focused survey for the unarmored threespine stickleback	September 5, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 103 during this survey. Very little water was present in the reach. However, unarmored threespine stickleback were previously found in this reach in 2005, 2006, 2007 and 2008 (BonTerra 2005, 2006, 2007, 2008).

3.3.25 REACH 104 - CASTAIC CREEK (PD 2441 - UNITS 1 AND 2)

Project Location

Reach 104, Castaic Creek (PD 2441 – Unit 2), is located in the Castaic Creek Watershed. The limits of Reach 104 are approximately 669 feet upstream of the Muirfield Lane Centerline to 478 feet downstream of the Turnberry Lane Centerline (Exhibit 1). Reach 104 is 2,186 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4459- H6 to 4459-H7).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 29
REACH 104 - CASTAIC CREEK (PD 2441 - UNIT 2)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 5, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 104 during this survey. Very little water was present in the reach.

3.3.26 REACH 105 - SAN FRANCISQUITO CHANNEL (PD 2456)

Project Location

Reach 105, San Francisquito Channel (PD 2456), is located in the Santa Clara River Watershed in unincorporated Los Angeles County (Exhibit 1). The limits of Reach 105 are approximately 417 feet upstream of the Decoro Drive Centerline to 416 feet downstream of the Decoro Drive Centerline. Reach 105 is 833 feet in total length. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4460-F6).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 30 REACH 105 – SAN FRANCISQUITO CHANNEL (PD 2456)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 5, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 105 during this survey. No water was present in the reach.

3.3.27 REACH 109 - SANTA CLARA RIVER - SOUTH BANK WEST OF MCBEAN PARKWAY (MTD 1510)

Project Location

Reach 109, Santa Clara River – South Bank West of McBean Parkway (MTD 1510), is an outlet located on the south bank (concrete levee), just west or downstream of McBean Parkway (Exhibit 1). The limits of Reach 109 are from the outlet, approximately 300 feet downstream of the McBean Parkway centerline, downstream 371 feet. The reach is found on the USGS Newhall 7.5-minute quadrangle map (Refer to Thomas Guide, Los Angeles County, page 4550-E2).

Survey Results

The table below summarizes the type of survey completed, the survey date, and the surveying biologist.

TABLE 31
REACH 109 – SANTA CLARA RIVER – SOUTH BANK WEST OF MCBEAN
PARKWAY (MTD 1510)

Survey Type	Survey Date	Surveying Biologist
Focused survey for the unarmored threespine stickleback	September 5, 2012	Dr. Carl Demetropoulos Samuel Stewart

Unarmored threespine stickleback was not observed in Reach 109 during this survey. While water was present in this reach (< 21 inches), it appeared to come mainly from residential and commercial sources and be of poor quality. However, unarmored threespine stickleback were previously found in this reach in 2009, 2010, and 2011 (BonTerra 2009, 2010, 2011).

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APPENDIX A SURVEYOR CERTIFICATE STATEMENT

SURVEYOR CERTIFICATE STATEMENT

I certify that the information in this survey report and enclosed exhibits fully and accurately represent our work.

Carl L. Demetropoulos, Ph.B. Senior Fisheries Biologist

(TE-72044A-0)



RESULTS OF SOUTHWESTERN WILLOW FLYCATCHER AND LEAST BELL'S VIREO REPORT





2013 FOCUSED SURVEY RESULTS

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT SOFT-BOTTOM CHANNELS MAINTENANCE CLEARING

Prepared for

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September 17, 2013

TABLE OF CONTENTS

<u>Section</u>			<u> </u>	Page			
Executive Su	ummar	y		ES-1			
Section 1.0	Introd	duction		1			
	1.1	Enviro	nmental Setting	1			
		1.1.1 1.1.2	Regional SettingLocal Setting				
	1.2	Propo	sed Project	7			
		1.2.1 1.2.2	Background Project Description				
	1.3	Specia	al Status Species Background	9			
		1.3.1 1.3.2 1.3.3	Arroyo Toad Least Bell's Vireo Southwestern Willow Flycatcher	10			
Section 2.0	Surve	ey Meth	odologies	13			
	2.1	Specia	al Status Amphibian Species	13			
		2.1.1	Arroyo Toad	13			
	2.2	Specia	al Status Bird Species	14			
Section 3.0	Survey Results1						
	3.1	Los Aı	ngeles River Watershed/San Pedro Bay	18			
		3.1.1	Reach 14 – May Channel (Main Channel Outlet into Pacoima Canyon)	18			
		3.1.2	Reach 27 – Wilmington Drain				
	3.2	San G	abriel River Area	18			
		3.2.1	Reach 39 – Beatty Channel Outlet at San Gabriel River (25+99.00+50')	12			
		3.2.2	,				
		3.2.3	Reach 43a – San Gabriel River – Upper				
	3.3	Santa	Clara River Area	20			
		3.3.1	Reach 80 – South Fork – Santa Clara River (PDS 1947 and 1946)	20			
		3.3.2	Reach 82 – Santa Clara River Main Channel (PD 2278)				
			Reach 109 – Santa Clara River – South Bank West of McBean Parkway (MTD 1510)				
Section 4.0	Refer	ences		21			

TABLES

<u>Table</u>		<u>Page</u>
ES-1	Summary of 2013 Results of Focused Surveys for the Los Angeles County Soft-Bottom Channels	ES-2
ES-2	Summary of Least Bell's Vireo Survey Results Since 2002 for the Soft-Bottom Channel Maintenance Program	ES-3
1	Arroyo Toad Survey Data	
2	Special Status Bird Survey Data	

EXHIBITS

<u>Exhibi</u>	<u>Follows Pa</u>	ge
1	Reach #12 – Haines Canyon Main Channel Outlet	. 4
2	Reach #14 - May Channel (Main Channel Outlet into Pacoima Canyon)	
3	Reach 27 – Wilmington Drain	
4	Reach 28 – Triunfo Creek (PD T2200)	
5	Reach 39 – Beatty Channel Outlet at San Gabriel River (25+99.00+50')	
6	Reach 40b - San Gabriel River - Santa Monica (I-10) Freeway to Thienes Avenue	. 4
7	Reach 43a – San Gabriel River – Upper	
8	Reach 43b - San Gabriel River – Lower	. 5
9	Reach 71 – Santa Clara River Main Channel (PD 1946)	. 5
10	Reach 75 - South Fork - Santa Clara River (PDs 725, 916, 1041, 1300)	. 5
11	Reach 79 - South Fork - Santa Clara River (Valencia Boulevard Bridge Stabilizer)	. 5
12	Reach 80 – South Fork – Santa Clara River (PDs 1947 and 1946)	
13	Reach 82 – Santa Clara River Main Channel (PD 2278)	. 6
14	Reach 86 – Violin Canyon Main Channel Outlet	. 6
15	Reach 87 - Castaic Creek - The Old Road Drain (CDR 525.021D) Outlet	
16	Reach 97 – Castaic Creek – The Old Road (PD 1982)	
17	Reach 103 – Bouquet Canyon Channel (PD 2225)	
18	Reach 104 – Castaic Creek (PD 2441 Units 1 and 2)	
19	Reach 105 – San Francisquito Canyon Channel (PD 2456)	
20	Reach 106 – Castaic Drain Outlet (RMD Channel)	. 7
21	Reach 109 - Santa Clara River - South Bank West of McBean Pkwy (MTD 1510)	
22	Reach 110 – Hasley Canyon Channel (PD 2262)	
23	Reach 14 Least Bell's Vireo Locations (Aerial)	
24	Reach 14 Least Bell's Vireo Locations (USGS Quad)	
25	Reach 27 Least Bell's Vireo Location (Aerial)	
26	Reach 27 Least Bell's Vireo Location (USGS Quad)	
27	Reach 39 Least Bell's Vireo Locations (Aerial)	
28	Reach 39 Least Bell's Vireo Locations (USGS Quad)	
29	Reach 40b Least Bell's Vireo Locations (Aerial)	
30	Reach 40b Least Bell's Vireo Locations (USGS Quad)	
31	Reach 43a Least Bell's Vireo Locations (Aerial)	
32	Reach 43a Least Bell's Vireo Locations (USGS Quad)	
33	Reach 80 Least Bell's Vireo Location (Aerial)	
34	Reach 80 Least Bell's Vireo Location (USGS Quad)	20

APPENDICES

Appendix

- Photo-Documentation Exhibits Α
- В Bird Compendia
- С Wildlife Compendia (Arroyo Toad Surveys) Surveyor Certificate Statement
- D
- Ε California Natural Diversity Database (CNDDB) Field Survey Forms
- Willow Flycatcher Survey and Detection Forms Least Bell's Vireo Survey Data Summary Sheets F
- G

EXECUTIVE SUMMARY

Focused surveys for Threatened and Endangered (T/E) species are conducted on a regular basis at selected soft-bottom channel reaches maintained by the Los Angeles County Flood Control District (LACFCD). Annual biological monitoring and periodic habitat assessments of all LACFCD soft-bottom channel reaches are completed to update and revise, when necessary, the particular channel reaches and species for which surveys are recommended. The following summary includes 3 Endangered animal species for which focused surveys were conducted at 22 channel reaches in 2013 and includes a maintenance overview with respect to these species. The 2013 survey results are also summarized below in Table ES-1.

AMPHIBIANS

ARROYO TOAD

Focused surveys for the arroyo toad (Anaxyrus californicus) were conducted at the following 11 channel reaches in 2013: Castaic Creek Reaches 86, 87, and 97 and Reach 104 in the Castaic Creek Watershed; San Francisquito Canyon Reach 105; the northern part of the South Fork Santa Clara River Reach 75 (i.e., from Magic Mountain Parkway upstream to the Via Princessa Bridge) and the South Fork Santa Clara River Reach 79; Reach 80 at the confluence of the Santa Clara and South Fork Santa Clara Rivers; and Santa Clara River Reaches 71, 82, and 109. These channel reaches may provide suitable breeding habitat during the spring season for the arroyo toad when water is present. Portions of these channel reaches also provide potentially suitable aestivating and foraging habitat. These surveys followed the U.S. Fish and Wildlife Service (USFWS) protocol for this species. Since the protocol does not require handling of the species, a Section 10(a)(1)(A) permit (Scientific Permit) for "take" under the Endangered Species Act is not necessary for performance of these surveys. Although not detected during the 2013 surveys, previous focused surveys have detected the arrovo toad at Reaches 71 and 82 (BonTerra Consulting 2003) and these two channel reaches are considered to be occupied (USFWS 2004). No arroyo toads were observed during the 2013 focused surveys.

The arroyo toad is not typically active during the time period when the soft-bottom channel maintenance occurs (September to November), with the exception of a limited number of juveniles, which stay near the active channel, and increased activity of some adults after storms (Ramirez 2003). Therefore, even if arroyo toads were present, the maintenance activity would not be expected to impact the arroyo toad's foraging or breeding activities. The arroyo toad would not be expected to aestivate in the maintenance area because the area that is maintained has compacted soil; therefore, the maintenance activities would not be expected to affect aestivation of this species.

BIRDS

LEAST BELL'S VIREO AND SOUTHWESTERN WILLOW FLYCATCHER

Focused surveys for the least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) were conducted in 2013 at a total of 21 channel reaches where they have potential to occur: 4 channel reaches in the Los Angeles River/San Pedro Bay/Santa Monica Bay areas (Reaches 12, 14, 27, and 28); 4 channel reaches in the San Gabriel River (Reaches 39, 40b, 43a, and 43b); and 13 channel reaches in the Santa Clara River and Castaic Creek Drainages (Reaches 71, 75, 79, 80, 82, 87, 97, 103, 104, 105, 106, 109, and 110). Surveys followed the USFWS protocol for both species. The southwestern willow flycatcher was not present during the 2013 focused surveys and there were also negative

survey results in 2011, 2009, 2007, 2005, 2003, and 2002. The least Bell's vireo was present during the 2013 surveys with a total of 13 territories at 5 channel reaches. Table ES-1 below presents a summary of the 2013 survey results for southwestern willow flycatcher and least Bell's vireo.

TABLE ES-1 SUMMARY OF 2013 RESULTS OF FOCUSED BIRD SURVEYS FOR THE LACFCD SOFT-BOTTOM CHANNELS

Reach Number	Reach Name	Focused Surveys for Arroyo Toad	Focused Surveys for Least Bell's Vireo	Focused Surveys for Southwestern Willow Flycatcher				
Los Angeles River Watershed/San Pedro Bay								
12	Haines Canyon Main Channel Outlet	N/A	Negative	Negative				
14	May Channel (Main Channel Outlet into Pacoima Canyon)	N/A	2 territories (1 pair/1 solitary male)	Negative				
27	Wilmington Drain	N/A	1 territory (solitary male)	Negative				
Malibu Cre	ek Watershed/Santa Monica Bay							
28	Triunfo Creek (PD T2200)	N/A	Negative	Negative				
San Gabrie	l River Watershed							
39	Beatty Channel Outlet at San Gabriel River (25+99.00+50')	N/A	2 territories (1 pair/1 solitary male)	Negative				
40b	San Gabriel River – Santa Monica (I-10) Freeway to Thienes Ave	N/A	5 territories (4 pairs)	1 Migrant				
43a	San Gabriel River – Upper	N/A	3 territories (2 pairs/1 solitary male)	Negative				
43b	San Gabriel River – Lower	N/A	Negative	Negative				
Santa Clara	River Watershed							
71	Santa Clara River Main Channel (PD 1946)	Negative	Negative	Negative				
75	South Fork-Santa Clara River (PDs 725, 916, 1041, 1300)	Negative	Negative	Negative				
79	South Fork – Santa Clara River (Valencia Blvd Bridge Stabilizer)	Negative	Negative	Negative				
80	South Fork – Santa Clara River (PDs 1947 and 1946)	Negative	Migrant male	Negative				
82	Santa Clara River Main Channel (PD 2278)	Negative	Negative	1 Migrant				
86	Violin Canyon Main Channel Outlet	Negative	N/A	N/A				
87	Castaic – The Old Road Drain (CDR 525.021D) Outlet	Negative	Negative	Negative				
97	Castaic Creek – The Old Road (PD 1982)	Negative	Negative	Negative				
103	Bouquet Canyon Channel (PD 2225)	N/A	Negative	Negative				
104	Castaic Creek (PD 2441 Units 1 and 2)	Negative	Negative	Negative				

TABLE ES-1 SUMMARY OF 2013 RESULTS OF FOCUSED BIRD SURVEYS FOR THE LACFCD SOFT-BOTTOM CHANNELS

Reach Number	Reach Name	Focused Surveys for Arroyo Toad	Focused Surveys for Least Bell's Vireo	Focused Surveys for Southwestern Willow Flycatcher			
105	San Francisquito Canyon Channel (PD 2456)	Negative	Negative	3 Migrants			
106	Castaic Drain Outlet (RMD Channel)	N/A	Negative	Negative			
109	Santa Clara River – South Bank West of McBean Pkwy (MTD 1510)	Negative	Negative	1 Migrant			
110	Hasley Canyon Channel (PD 2262)	N/A Negative N		Negative			
N/A = Not applicable; no potential habitat for the species; therefore no survey conducted.							

The 2013 survey results for least Bell's vireo are shown below in Table ES-2 with the previous survey results for this species under the LACFCD soft-bottom channel maintenance program. Although migrant or transitory least Bell's vireos have been detected at other channel reaches in these focused surveys, only these six channel reaches have supported least Bell's vireo territories.

Both the least Bell's vireo and southwestern willow flycatcher are migratory species that are only present in Southern California from about March through early September. As required by the permits (see U.S. Army Corps of Engineers Nationwide Permit 31 dated September 30, 2010, with Informal USFWS Section 7 Consultation), in order to avoid and/or minimize potential impacts on these species, all channel maintenance clearing work occurs outside this time period (March 15–September 15); additionally, seasonally occupied habitat is identified and protected by flagging and clearing activities are monitored by a qualified biologist.

TABLE ES-2
SUMMARY OF LEAST BELL'S VIREO SURVEY RESULTS SINCE 2002 FOR THE
SOFT-BOTTOM CHANNEL MAINTENANCE PROGRAM

Reach Number	Reach Name	2013	2011	2009	2007	2005	2003	2002	
Los Ange	Los Angeles River Watershed/San Pedro Bay								
14	May Channel (Main Channel Outlet into Pacoima Canyon)	2 territories (1 pair/ 1 solitary male)	3 territories (3 pairs)	2 territories (2 solitary males)	Negative	1 territory (1 pair)	Negative	Negative	
27	Wilmington Drain	1 territory (solitary male)	1 territory (solitary male)	Negative	1 territory (solitary male)	Negative	Negative	Negative	
San Gabr	San Gabriel River Watershed								
39	Beatty Channel Outlet at San Gabriel River (25+99.00+50')	2 territories (2 pairs)	3 territories (3 pairs)	4 territories (3 pairs/ 1 solitary male)	2 territories (2 pairs)	1 territory (1 pair)	Negative	No Survey	

TABLE ES-2 SUMMARY OF LEAST BELL'S VIREO SURVEY RESULTS SINCE 2002 FOR THE SOFT-BOTTOM CHANNEL MAINTENANCE PROGRAM

Reach Number	Reach Name	2013	2011	2009	2007	2005	2003	2002
40b	San Gabriel River-Santa Monica (I-10) Freeway to Thienes Ave	5 territories (4 pairs/ 1 solitary male)	4 territories (4 pairs)	2 territories (1 pair/ 1 solitary male)	3 territories (3 solitary males)	Negative	Negative	2 territories (1 pair/ 1 solitary male)
43a	San Gabriel River-Upper	3 territories (2 pairs/ 1 solitary male)	4 territories (2 pairs/ 2 solitary males)	4 territories (3 pairs/ 1 solitary male)	1 territory (1 pair)	1 territory (1 pair)	1 territory (solitary male)	1 territory (1 pair)
43b	San Gabriel River-Lower	Negative	Negative	1 territory (solitary male)	Negative	Negative	Negative	1 territory (1 pair)
	Total Territories	13	15	13	7	3	1	4

SECTION 1.0 INTRODUCTION

In 2002, focused surveys and habitat assessments were conducted at 54 soft-bottom channel reaches that included 53 of the original channel reaches plus 1 new channel reach identified as Reach 101 (Violin Canyon – PD 2312). All 53 original channel reaches have continued to be maintained by the LACFCD under the required regulatory permits, but Reach 101 and other new channel reaches added since that time have yet to be permitted. The purpose of the 2002 surveys was to provide baseline information on the occurrence or potential occurrence of Threatened or Endangered plant and wildlife species for permitted and non-permitted channel reaches. This information is updated annually during pre- and post-clearing surveys of all permitted and non-permitted soft-bottom channel reaches managed by the LACFCD.

1.1 **ENVIRONMENTAL SETTING**

1.1.1 REGIONAL SETTING

The topography in Los Angeles County is diverse, containing coastline, flatlands, mountains, and desert within approximately 4,000 square miles. Elevations in the County range from sea level to over 10,000 feet above mean sea level (msl). The climate ranges from mild near the coast to severe in the high mountains and in the desert. This variation in environments has created a unique and diverse collection of biological resources (England and Nelson 1976).

The San Gabriel Mountains are a prominent topographic feature that include a portion of the headwaters of the Santa Clara, Los Angeles, Rio Hondo, and San Gabriel Rivers, and are the source of streams that drain into the Antelope and Fremont Valleys. The San Gabriel Mountains rise 7,000 feet above msl from the Antelope and Santa Clarita Valleys and exert considerable influence on the climate, hydrology, and ecology of the lands around them. The San Andreas and other numerous faults have fractured the mountains so that they erode at a rapid rate. Hence, the stream basins along the northern slope are generally characterized by steep headwaters and sloping alluvial beds on the adjacent flatlands (CRA et al. 2001).

The Santa Monica Mountains are also a prominent topographic feature and include the headwaters of Malibu Creek and Topanga Creek; these are the sources of streams that drain to the Malibu Coast. The Santa Monica Mountains are up to 10 miles wide and reach an elevation of 3,100 feet above msl at Sandstone Peak. The Santa Monica Mountains have a complex structure because they have been uplifted and then eroded several times over the past 200 million years (Dale 1986; England and Nelson 1976).

There are 4 major rivers in Los Angeles County: the Los Angeles River is approximately 51 miles long (main stem) and drains 830 square miles; the Rio Hondo River is approximately 20 miles long (main stem) and drains 125 square miles; the San Gabriel River is approximately 59 miles long (main stem) and drains 350 square miles; and the Santa Clara River is approximately 75 miles long (main stem) and drains 1,616 square miles (LACFCD 2007). Numerous other streams also occur in Los Angeles County. Surface water in streams and rivers is generally only present during the winter and spring, particularly after storm events. Many storms do not generate sufficient runoff to sustain surface flow in all streams. In some areas, flows are supplemented with reclaimed water and agricultural and urban runoff. Particularly intense storms can result in flash floods or debris flows, which can carry large amounts of sediment, rocks, and debris to be deposited in the valley below (CRA et al. 2001).

The Los Angeles River system has been extensively channelized to provide flood protection as it passes through several cities on its way to the Pacific Ocean. The Los Angeles River tributaries include Bell Creek, Calabasas Creek, Burbank Western Channel, Pacoima Wash,

Tujunga Wash, Verdugo Wash, Arroyo Seco, Compton Creek, and the Rio Hondo River (LACFCD 2007). There are now over 400 miles of concrete-lined tributaries that feed into the main channel (LACFCD 2007). Approximately 47.9 miles of the 51.0-mile river is concrete-lined. The two stretches where the river is not lined (i.e., soft or earthen bottom channels) are the Sepulveda Flood Control Basin through the Glendale Narrows and south of Willow Street in Long Beach (LACFCD 2007). Reclaimed water enters the Los Angeles River at the Sepulveda Basin where the Department of Water and Power releases as much as 75 million gallons of reclaimed water daily from the Donald C. Tillman Water Reclamation Plant.

The San Gabriel River begins in the Angeles National Forest and also flows through several cities on its way to the Pacific Ocean. The San Gabriel River tributaries include Walnut Creek, San Jose Creek, Coyote Creek, and numerous storm drains (LACFCD 2007). The headwaters of the San Gabriel River begin just north of Pasadena and northwest of Mount Wilson, where they flow through a steep canyon to Cogswell Reservoir. The west fork of the river then merges with the east fork and flows into the San Gabriel Reservoir. Below the reservoir, the east fork converges with the main stem of the San Gabriel River and flows through San Gabriel Canyon to Morris Reservoir. Below Morris Reservoir, the river flows through cities from Azusa to Seal Beach and empties into the Long Beach Harbor.

The Santa Clara River is unique because it is the only major non-channelized river that drains the San Gabriel Mountains. The Santa Clara River is fed by five major tributaries: Sand Canyon, Mint Canyon, Bouquet Canyon, South Fork, and San Francisquito Canyon (LACFCD 2007). Further west, Castaic, Piru, Sespe, and Santa Paula Creeks join the river (CRA et al. 2001). The headwaters of the Santa Clara River are located near Acton, and the river runs approximately 100 miles to its outlet in the City of Ventura in Ventura County. Most development adjacent to the river is located in or near the City of Santa Clarita (LACFCD 2007).

The Malibu Creek Watershed is a system of independent streams that drains approximately 109 square miles in northwest Los Angeles County from the Santa Monica Mountains to the Pacific Ocean. These include Las Virgenes, Triunfo, and Cold Creeks, as well as other small streams that flow from the Santa Monica Mountains to Santa Monica Bay. These creeks flow through the cities of Agoura Hills, Calabasas, Malibu, Thousand Oaks, Westlake Village, unincorporated Los Angeles County, and Ventura County (LACFCD 2007).

The Ballona Creek Watershed is a ten-mile-long flood-control channel that drains the Los Angeles basin from the Santa Monica Mountains to the north, the Harbor Freeway (Interstate [I] 110) to the east, and the Baldwin Hills to the south. All together, the Ballona Creek Watershed drains approximately 130 square miles of the Los Angeles Basin. Creeks or drainages of this watershed include Centinela Creek, Sepulveda Channel, and Benedict Canyon Channel. These drainages pass through the communities of Beverly Hills, Culver City, Inglewood, Los Angeles, and West Hollywood (LACDPW 2007).

The Dominguez Channel Watershed is situated in south Los Angeles County and drains approximately 133 square miles of the Los Angeles Basin into the Los Angeles Harbor. Parts of the communities of Hawthorne, Torrance, Gardena, Carson, and Wilmington drain into the Dominguez Channel. Over 40 percent of this watershed consists of industrial, commercial, and transportation land uses.

The Antelope Valley Watershed is a system of independent streams that drains approximately 1,200 square miles in north Los Angeles County from the San Gabriel Mountains and Kern County into the valley floor. These include Little Rock, Big Rock, and Mill Creeks, as well as other small streams that flow from the San Gabriel Mountains into the Antelope Valley. Due to the surrounding topography, these streams do not drain into the sea, but into dry lakebeds on the valley floor, with most surface flows infiltrating into groundwater basins or evaporating

(CRA et al. 2001; LACFCD 2007). Because the valley lacks defined natural channels outside the foothills, it is subject to unpredictable sheet flow patterns (LACFCD 2007). The portion of the Antelope Valley Watershed in Los Angeles County includes the cities of Lancaster and Palmdale, with scattered clusters of sparse development outside these cities (LACFCD 2007). None of the channel reaches discussed in this report are located in the Antelope Valley Watershed.

1.1.2 LOCAL SETTING

In 2002, the LACFCD maintained 95 soft-bottom channel reaches located within its district boundaries, consisting of 885.58 acres that require management. Since 2002, ten soft-bottom channel reaches have been lost due to development or ownership change, but several more have been added to the list. As of 2013, the LACFCD manages 108 channel reaches (Nos. 1 through 117¹) that are located in 7 identified watersheds of Los Angeles County:

- Los Angeles River/San Pedro Bay 25 channel reaches²
- Dominguez Channel 3 channel reaches
- Malibu Creek 9 channel reaches
- San Gabriel River 9 channel reaches (not splitting Reaches 40 and 43 and including Reach 116, Los Cerritos Channel)
- Santa Clara River 59 channel reaches
- Ballona Creek 1 channel reach
- Antelope Valley 1 channel reach

In 1997, the 95 soft-bottom flood-control channel reaches encompassed 885.58 acres and included 205.27 acres of vegetation. Based on vegetation categories developed at the time, the 205.27 acres of vegetation included an estimated 105.32 acres of riparian vegetation, 63.40 acres of mule fat vegetation, and 36.55 acres of scrub vegetation (BonTerra Consulting 1999). The acreages noted above have not been updated since that time and are presented to indicate the large amount of habitat under LACFCD jurisdiction.

Survey Areas

Of the 94 maintained channel reaches within the boundaries of the LACFCD, 22 reaches have been determined to contain potential habitat for Threatened or Endangered amphibian (arroyo toad) and/or bird (southwestern willow flycatcher and least Bell's vireo) species. These channel reaches are the subject of the focused survey effort and are described below.

Los Angeles River Watershed/San Pedro Bay

Reach 12 - Haines Canyon Main Channel Outlet

Reach 12, Haines Canyon Main Channel Outlet, is located within the Tujunga Wash approximately one mile northwest of the intersection of Mount Gleason Avenue and Foothill Boulevard, in the community of Sunland, City of Los Angeles (Exhibit 1). Reach 12 is approximately 437 feet in total length, extending approximately 791 feet downstream of

Numbers for channel reaches that have been developed or had their ownership transferred are no longer in use.

Although it had been previously included in the regulatory permits, it was recently determined during the Los Angeles River Watershed Feasibility Study that the Sheep Corral Channel (Reach 17) flood-control facility was owned and maintained by the City of Glendale and not the LACFCD.

Wentworth Street to approximately 1,228 feet downstream. It is found in Section 11 on the U.S. Geological Survey (USGS) Sunland 7.5-minute quadrangle map at Township 2 North and Range 14 West.

Reach 14 - May Channel (Main Channel Outlet into Pacoima Canyon)

Reach 14, May Channel (Main Channel Outlet into Pacoima Canyon), is located within the Pacoima Wash, approximately 1.25 miles east of the intersection of the Foothill Freeway (I-210) and Hubbard Street in the City of Los Angeles (Exhibit 2). Reach 14 is 690 feet in total length extending from 3,038 feet downstream of Hubbard Street to approximately 3,728 feet downstream of the confluence of Hubbard Street with Pacoima Canyon. It is found in Section 25 on the USGS San Fernando 7.5-minute quadrangle at Township 3 North and 15 Range West.

Reach 27 – Wilmington Drain

Reach 27, Wilmington Drain, is located within the San Pedro Bay Watershed in unincorporated Los Angeles County and within the Wilmington community of the City of Los Angeles (Exhibit 3). The limits of Reach 27 are the Harbor (I-110) Freeway to Pacific Coast Highway. Reach 27 is approximately 3,584 feet in total length. The reach is found in Section 25 of the USGS Torrance 7.5-minute quadrangle map at Township 4 South and Range 14 West.

Malibu Creek Watershed/Santa Monica Bay

Reach 28 – Triunfo Creek (PD T2200)

Reach 28, Triunfo Creek (PD T2200), is located within the Malibu Creek Watershed in unincorporated Los Angeles County, approximately 0.1 mile east of the Mulholland Highway and Troutdale Drive intersection (Exhibit 4). The limits of Reach 28 are approximately 384 feet upstream of Mulholland Highway to the downstream edge of Mulholland Highway. Reach 28 is approximately 474 feet in total length. The reach is found in Section 4 of the USGS Point Dume 7.5-minute quadrangle map at Township 1 South and Range 18 West.

San Gabriel River Watershed

Reach 39 - Beatty Channel Outlet at San Gabriel River

Reach 39, Beatty Channel Outlet at San Gabriel River (25+99.00±50'), is located within the San Gabriel River Watershed, approximately 0.8 mile north of the Foothill Boulevard and Irwindale Avenue intersection in the City of Azusa (Exhibit 5). The limits of Reach 39 are approximately 2,323 feet downstream of Todd Avenue to approximately 2,415 feet downstream of Todd Avenue. Reach 39 is 145 feet in total length. The reach is found in Section 28 of the USGS Azusa 7.5-minute quadrangle map at Township 1 North and Range 10 West.

Reach 40b – San Gabriel River – Santa Monica (I-10) Freeway to Thienes Avenue

Reach 40b, San Gabriel River-Santa Monica (I-10) Freeway to Thienes Avenue, is located within the San Gabriel River Watershed in the San Gabriel Valley area (Exhibit 6). The limits of Reach 40b are the Santa Monica (I-10) Freeway (upstream) and Thienes Avenue (downstream). Reach 40b has a total length of approximately 10,800 feet. The reach is found in Sections 23, 26, and 34 of the USGS Baldwin Park 7.5-minute quadrangle map at Township 1 South and Range 11 West.

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Reach 43a – San Gabriel River – Upper

Reach 43a, San Gabriel River – Upper, is located within the San Gabriel River Watershed, in the San Gabriel Valley area (Exhibit 7). The limits of Reach 43a are between Whittier Narrows Dam and San Gabriel River Parkway. Reach 43a has a total length of approximately 3,450 feet. The reach is found in Sections 5 and 8 of the USGS Whittier 7.5-minute quadrangle map at Township 2 South and Range 11 West.

Reach 43b – San Gabriel River – Lower

Reach 43b, San Gabriel River – Lower, is located within the San Gabriel River Watershed, in the San Gabriel Valley area (Exhibit 8). The limits of Reach 43b are San Gabriel River Parkway (upstream) and Beverly Boulevard (downstream). Reach 43b has a total length of approximately 3,050 feet. The reach is found in Sections 7 and 8 of the USGS Whittier 7.5-minute quadrangle map at Township 2 South and Range 11 West.

Santa Clara River Watershed

Reach 71 – Santa Clara River Main Channel (PD 1946)

Reach 71, Santa Clara River Main Channel (PD 1946), is located within the Santa Clara River-South Fork Watershed in the City of Santa Clarita (Exhibit 9). The limits of Reach 71 are approximately 276 feet upstream of McBean Parkway (at the confluence with the South Fork of the Santa Clara River) to the downstream edge of McBean Parkway. Reach 71 is 346 feet in total length. The reach is found in Section 16 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 75 – South Fork – Santa Clara River (PDs 725, 916, 1041, 1300)

Reach 75, South Fork – Santa Clara River (PDs 725, 916, 1041, 1300), is located within the Santa Clara River – South Fork Watershed in the City of Santa Clarita (Exhibit 10). The limits of Reach 75 are approximately 255 feet downstream of Lyons Avenue to the downstream edge of Magic Mountain Parkway. Reach 75 is 13,965 feet in total length. The reach is found in Sections 22, 27, and 34 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 79 – South Fork – Santa Clara River (Valencia Boulevard Bridge Stabilizer)

Reach 79, South Fork – Santa Clara River (Valencia Boulevard Bridge Stabilizer), is located within the Santa Clara River – South Fork Watershed (Exhibit 11). The limits of Reach 79 are the downstream edge of Valencia Boulevard to approximately 167 feet downstream of Valencia Boulevard. Reach 79 is 167 feet in total length. The reach is found in Sections 5 and 7 of the USGS Newhall 7.5-minute quadrangle map at Township 2 South and Range 11 West.

Reach 80 – South Fork-Santa Clara River (PDs 1947 and 1946)

Reach 80, South Fork – Santa Clara River (PDs 1947 and 1946), is located within the Santa Clara River – South Fork Watershed (Exhibit 12). The limits of Reach 80 are approximately 3,080 feet upstream of McBean Parkway to approximately 276 feet upstream of McBean Parkway and the confluence with Santa Clara River. Reach 80 is 2,804 feet in total length. The reach is found in Sections 15 and 16 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 82 – Santa Clara River Main Channel (PD 2278)

Reach 82, Santa Clara River Main Channel (PD 2278), is located within the Santa Clara River Watershed, approximately 0.75 mile east of the I-5 and Magic Mountain Parkway intersection in the City of Santa Clarita (Exhibit 13). The upstream limits of Reach 82 are approximately 740 feet southeast of the intersection of Hopkins Avenue and Rockefeller Avenue to just south of the intersection of Hopkins Avenue and Rockefeller Avenue. Reach 82 is 865 feet in total length. The reach is found in Section 16 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 86 - Violin Canyon Main Channel Outlet

Reach 86, Violin Canyon Main Channel Outlet, is located within the Castaic Creek Watershed in the community of Castaic in unincorporated Los Angeles County, approximately 0.5 mile southeast of the I-5 and Lake Hughes Road intersection (Exhibit 14). The limits of Reach 86 are approximately 1,021 feet downstream of Ridge Route Road to the confluence with Castaic Creek. Reach 86 is 946 feet in total length. The reach is found in Sections 23 and 24 of the USGS Newhall 7.5-minute quadrangle map at Township 5 North and Range 17 West.

Reach 87 – Castaic – Old Road Drain (CDR 525.021D) Outlet

Reach 87, Castaic – Old Road Drain (CDR 525.021D) Outlet, is located within the Castaic Creek Watershed, approximately one mile northwest of the I-5 and Henry Mayo Drive (State Route 126) in the Castaic Junction Community of unincorporated Los Angeles County (Exhibit 15). The limits of Reach 87 are approximately 610 feet downstream of the intersection of Hasley Canyon Road and Old Road to the confluence with Castaic Creek. Reach 87 is 240 feet in total length. The reach is found in Section 12 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 17 West.

Reach 97 – Castaic Creek – The Old Road (PD 1982)

Reach 97, Castaic Creek – The Old Road (PD 1982), is located within the Castaic Creek Watershed in the Castaic Junction Community of unincorporated Los Angeles County (Exhibit 16). The limits of Reach 97 are approximately 300 feet downstream to 2,300 feet downstream of The Old Road. Reach 97 is 2,000 feet in total length. The reach is found in Section 12 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 17 West.

Reach 103 – Bouquet Canyon Channel (PD 2225)

Reach 103, Bouquet Canyon Channel (PD 2225), is located within the Santa Clara River Watershed (Exhibit 17). The limits of Reach 103 are approximately 173 feet downstream of the centerline of Newhall Ranch Road (beginning of Grouted Stone Toe) to the Metropolitan Water District Fee Right-of-Way on the right bank and the embankment turn at the Santa Clara River on the left bank. Reach 103 is 1,824 feet in total length. The reach is found in Section 16 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 104 – Castaic Creek (PD 2441 – Units 1 and 2)

Reach 104 – Castaic Creek (PD 2441 – Units 1 and 2), is located within the Castaic Creek Watershed. The limits of Reach 104 are approximately 669 feet upstream of the Muirfield Lane Centerline to 478 feet downstream of the Turnberry Lane Centerline (Exhibit 18). Reach 104 is 2,186 feet in total length. The reach is found in Section 12 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 17 West.

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Reach 105 – San Francisquito Canyon Channel (PD 2456)

Reach 105, San Francisquito Canyon Channel (PD 2456), is located within the Santa Clara River Watershed in unincorporated Los Angeles County (Exhibit 19). The limits of Reach 105 are approximately 417 feet upstream of the Decoro Drive Centerline to 416 feet downstream of the Decoro Drive Centerline. Reach 105 is 833 feet in total length. The reach is found in Section 9 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 106 – Castaic Drain Outlet (RMD³ Channel)

Reach 106, Castaic Drain Outlet (RMD Channel), is located within the Santa Clara River Watershed. The limits of Reach 106 are approximately the toe of grouted riprap apron to approximately 147 feet downstream of grouted riprap apron (Exhibit 20). Reach 106 is 147 feet in total length. The reach is found in Section 25 of the USGS Newhall 7.5-minute quadrangle map at Township 5 North and Range 17 West.

Reach 109 – Santa Clara River – South Bank West of McBean Parkway (MTD 1510)

Reach 109, Santa Clara River – South Bank West of McBean Parkway (MTD 1510), is an outlet located on the south bank (concrete levee) just west or downstream of McBean Parkway (Exhibit 21). The limits of Reach 109 are from the outlet, approximately 300 feet downstream of the McBean Parkway centerline to approximately 371 feet downstream of the McBean Parkway centerline (Exhibit 21). The reach is found in Section 16 of the USGS Newhall 7.5-minute quadrangle map at Township 4 North and Range 16 West.

Reach 110 – Hasley Canyon Channel (PD 2262)

Reach 110, Hasley Canyon Channel (PD 2262), is located within the Santa Clara River Watershed (Exhibit 22). It is a narrow channel of about ½ mile long with a relatively steep gradient. The reach is found in Sections 2 and 11 of the USGS Val Verde 7.5-minute quadrangle map at Township 4 North and Range 17 West.

1.2 PROPOSED PROJECT

1.2.1 BACKGROUND

To effectively control flood waters from the mountainous watersheds surrounding the Los Angeles Basin, the U.S. Army Corps of Engineers (USACE) and the LACFCD constructed concrete-bottom and earth-bottom channels leading from dams and debris basins located along the frontal slopes of the San Gabriel, Santa Monica, Verdugo, and Santa Susanna Mountains. Construction began in the 1930s. These channels, as a system, provide flood protection for Los Angeles County.

Channel maintenance activities have been performed regularly in LACFCD channels for over 50 years. Originally constructed by the USACE, upon completion, most of the channel facilities were transferred to the LACFCD for cyclic maintenance. The USACE's maintenance guidelines require that "debris, objectionable growth, shoals, and waste materials must not encroach on the invert. Excess materials that will not move readily with low flows must be removed. Measures must be taken to control objectionable growth by approved chemical or mechanical means" (USACE 1996).

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The Los Angeles County Department of Public Works' Road Maintenance Division (RMD) is responsible for maintenance at this soft-bottom channel reach.

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The County formerly maintained channels clear of any vegetation, as required under the *Code of Federal Regulations* (33 CFR 208.10), until the California Department of Fish and Wildlife (CDFW) began requiring the County to clear vegetation on alternating sides of the channels each year. The USACE allowed limited clearing to occur between 1993 and 1995. Anticipated heavy rains during the 1997/1998 storm season caused by El Niño conditions resulted in a statewide need to remove vegetation and sediment from soft-bottom channels to restore their flood-carrying capacity. The LACFCD obtained all necessary permits to conduct this work in the 1997/1998 storm season and has continued the ongoing maintenance as approved by the permits.

1.2.2 PROJECT DESCRIPTION

Vegetative growth in a channel system reduces channel capacity. All soft-bottom channels were designed and constructed as relatively clean, unvegetated channels. As vegetation grows more densely, the roughness of the channel increases and the velocity of flows decrease, which corresponds to a loss in the channel's carrying capacity. The vegetation also traps some of the sediments being transported by flood flows which, when deposited, further reduce channel capacity. Studies have shown that increased vegetation and sediments in the channels result in reduced flow area with a concomitant decrease in flow velocity (LACFCD 1996). A loss of carrying capacity in the channels could cause flood flows to escape the channel systems and impact adjacent properties (LACFCD 1996).

Vegetation can also affect the structural integrity of bridges during a major storm event. Vegetation slows flood flows, which creates a backwater effect and increases water surface elevations upstream. Bridges are not normally designed to withstand the forces that result from significantly increased flood water elevations. Additionally, increased flood depths upstream can result in flooding of adjacent properties and erosion of channel banks.

The LACFCD performs annual vegetation clearing in channels and minor grading to retrain channel flows consistent with the clearing limits established by the permitted maintenance plan (BonTerra Consulting 1999). This ongoing program is necessary to maintain the design capacities of the channels and to ensure the proper functioning of these facilities located within the LACFCD boundaries.

Within each reach, the LACFCD proposes to clear the same areas (and acreage) that have been cleared annually since 1997. Biological impacts to these channel reaches associated with the initial clearing of vegetation for maintenance activities were previously mitigated through maintaining and enhancing 62.7 acres of riparian habitats at the Big Tujunga Wash Mitigation Bank site (BonTerra Consulting 1999).

Channel clearing activities are performed primarily by mechanical means, using heavy equipment (e.g., trucks, bulldozers, dump trucks, and loaders), as well as other equipment (e.g., mowers) that are designed specifically for this type of work. Hand clearing or mowing is conducted in areas where mechanical equipment cannot be used or where important biological resources exist nearby. Herbicides approved by regulatory agencies are applied, as necessary, to eradicate invasive and/or non-native vegetation including, but not limited to, giant reed (*Arundo donax*) and castor bean (*Ricinus communis*).

The channel clearing activities are performed under an existing Maintenance Plan approved by the Los Angeles Regional Water Quality Control Board (RWQCB) and USACE and modified by the CDFW under the existing Streambed Alteration Agreement between CDFW and the LACFCD. BonTerra Consulting has reviewed the Maintenance Plan and has extensive knowledge of channel clearing activities in all channel reaches, having worked with the LACFCD since 1997 to provide biological monitoring of flood-control channel maintenance work.

Pre-clearing and post-clearing photos have been taken every year to document the biological resources in these channel reaches in compliance with the mitigation requirements of existing permits from the USACE, the USFWS, the Los Angeles RWQCB, and the CDFW.

1.3 SPECIAL STATUS SPECIES BACKGROUND

In order to comply fully with the regulatory permits issued to the LACDPW, surveys are performed for a variety of special status species at soft-bottom channel reaches where suitable or potentially suitable habitat has been identified. For example, the permits require annual preclearing surveys for the federally and State-listed Endangered unarmored threespine stickleback (Gasterosteus aculeatus williamsoni) and the federally listed Threatened Santa Ana sucker (Catostomus santaanae). Results of these fish surveys were included with previous survey efforts in 2002 and 2003 (BonTerra Consulting 2002, 2003), but have since been reported separately to the LACDPW. This report provides the results of surveys for the arroyo toad (Anaxyrus californicus), least Bell's vireo (Vireo bellii pusillus), and southwestern willow flycatcher (Empidonax traillii extimus).

1.3.1 ARROYO TOAD

The arroyo toad was listed as a federally Endangered species by the USFWS on January 17, 1995 (CDFW 2013) and is a California Species of Special Concern (CDFW 2011). At the time of listing, the arroyo toad was one of two subspecies of the southwestern toad (Bufo microscaphus), but subsequent genetic studies (Gergus 1998) resulted in the separation of arroyo toad (B. californicus) from the Arizona toad (B. microscaphus). Recent research (Frost et al. 2006) placed both species in the genus Anaxyrus.

This is a rather uniformly warty and stocky toad with a light-colored stripe across the head that includes the eyelids. The parotid glands are oval-shaped, widely separated, and pale toward the front. The underside of the arroyo toad is usually buff-colored and unspotted, and the cranial crests are absent or weak. The typical size (snout to vent length) range of reproductive adult toads is 2 to 2.6 inches for males and 2.6 to 3.1 inches for females (Sweet 1992, 1993). Tadpoles reach an average maximum length of 1.3 inches (maximum of 1.6 inches) and are black at hatching. Soon after hatching, the tadpoles develop a tan-colored dorsum with crossbars on the tail and an opaque, white abdomen (venter) before metamorphosing (Sweet 1992).

Early descriptions of the habitat requirements for the arroyo toad are based on detailed life history studies conducted over a period of years by Sweet (1992, 1993). Much of that work was conducted in the Los Padres National Forest in Santa Barbara County. Subsequent to this work, additional studies of populations in other portions of the range have resulted in a somewhat broader habitat description (e.g., Griffin et al. 1999; Ramirez 1999, 2000, 2001, 2002a, 2002b, 2002c). It can generally be said that the arroyo toad frequents third order washes, streams, and arroyos in semiarid parts of the southwest. Stream substrates range from sands to small cobble. with sandy banks supporting mule fat (Baccharis salicifolia), willows (Salix spp.), cottonwoods (Populus spp.), and/or sycamores (Platanus racemosa). The arroyo toad breeds both within streams and in small backwater pools that form along the stream margins, usually in relatively shallow water (about four inches) with sand or gravel substrate.

Arroyo toads are primarily nocturnal, except during the breeding season when they are sometimes active during daylight hours. These toads will move extensively in upland habitats, at least seasonally. Adult males will sometimes travel 1.2 to 1.9 miles along a stream course, often becoming more sedentary once reaching a large size (Sweet 1992). Females are more sedentary, typically maintaining an area of movement less than 330 feet in diameter (Sweet 1992). Adults mostly feed on ants, particularly nocturnal ants such as trail-forming tree ants (*Liometopum occidentale*), but will also consume other invertebrates (Sweet 1992). Tadpoles are substrate gleaners, feeding on detritus and microbial mats from just beneath the surface layer of fine sediments or within the interstices of gravel deposits (Sweet 1992).

On February 7, 2001, the USFWS published a final rule designating 182,360 acres of land in California including parts of Monterey, Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties as critical habitat for the arroyo toad (USFWS 2005a). Following the designation of critical habitat, several lawsuits were filed challenging various aspects of the designation. In response to these lawsuits, the critical habitat designation was vacated and the USFWS was instructed by the court to re-evaluate its previous position.

On April 28, 2004, the USFWS published a final rule designating 11,695 acres of critical habitat for the arroyo toad in portions of Santa Barbara, Ventura, Los Angeles, San Bernardino, and Riverside Counties (USFWS 2005a). Further lawsuits were filed that successfully challenged this final rule and resulted in another proposed rule for revised critical habitat that was published in the *Federal Register* on October 13, 2009 (USFWS 2009). The revised critical habitat final rule was released on February 9, 2011 (USFWS 2011).

Four Castaic Creek channel reaches (Reaches 86, 87, 97, and 104) are located in Unit 6, Subunit B, of this final critical habitat revision (USFWS 2011). Another surveyed channel reach (Reach 110) is located just upstream of Unit 6, Subunit B of this final critical habitat (USFWS 2011). One surveyed channel reach (Reach 82) previously located within proposed critical habitat (USFWS 2005a), is now located about 1,000 feet upstream of Unit 6, Subunit B of this final critical habitat (USFWS 2011). No other channel reaches managed by the LACFCD are located in this final critical habitat.

1.3.2 LEAST BELL'S VIREO

The least Bell's vireo was formerly a common, even locally abundant summer resident of Southern California's lowland riparian woodlands (Grinnell and Miller 1986). The substantial population decline of this avian species over the latter half of the twentieth century is attributable to the loss and degradation of riparian habitats and, perhaps more importantly, brood parasitism by the brown-headed cowbird (*Molothrus ater*). The least Bell's vireo was listed by the California Department of Fish and Game (CDFG)⁴ as State Endangered on October 2, 1980, and by the USFWS as federally Endangered on May 2, 1986 (USFWS 1986).

The Bell's vireo is a neotropical migrant that breeds in central and southwestern North America from northern Mexico to Southern California, Nevada, and Utah, east to Louisiana, and north to North Dakota, Wisconsin, and Indiana in the central U.S. (AOU 1998). The winter range of this vireo, although not well known, is believed to be the west coast of Central America from southern Sonora south to northwest Nicaragua, including the cape region of Baja California, Mexico (Brown 1993). Of the four Bell's vireo subspecies, only two breed in California: the least Bell's vireo and the Arizona Bell's vireo (*V. b. arizonae*), which occurs in the Colorado River Valley (Garrett and Dunn 1981; Rosenberg et al. 1991). Though the least Bell's vireo was formerly considered a common breeder in riparian habitats throughout the Central Valley and other low elevation river systems in California and Baja California, Mexico (Franzreb 1989), it had been eliminated from much of its historical range by the time of its listing in 1986 (Franzreb 1989; Brown 1993). Recovery efforts since its listing have included habitat protection; removal of exotic species (particularly giant reed); and trapping programs for the brown-headed cowbird (USFWS 2006). The least Bell's vireo population has increased tenfold from

Although the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW) effective January 1, 2013, "CDFG" is still used throughout this document for all documents published or database searches completed before January 1, 2013.

291 territories in the early 1980s to an estimated 2,968 territories 20 years later (USFWS 2006). After a decade or more of absence in Los Angeles County, the least Bell's vireo returned by the mid-1980s with a pair reported from Whittier Narrows in 1985 and 1986 (Long 1993). Least Bell's vireo numbers have continued to increase since that time, and it is now known to occur at several other locations in Los Angeles County such as the San Fernando (Van Norman) Dam; the San Gabriel River at Fish Canyon and Van Tassel Canyon; the Sepulveda Basin Wildlife Area; and the Castaic Lagoon Recreation Area (CDFG 2009). The two largest populations in the county are at Hansen Dam in the northeastern corner of the San Fernando Valley where 44 least Bell's vireo territories were present in 2009 (Griffith Wildlife Biology 2009) and on the Santa Clara River from the I-5 Freeway downstream to the Las Brisas Bridge where 56 least Bell's vireo territories were present in 2007 (Bloom Biological, Inc. 2007).

Least Bell's vireos breed primarily in riparian habitats dominated by willows with dense understory vegetation. Shrubs such as mule fat and California rose (*Rosa californica*) are often a component of the understory (Goldwasser 1981). The least Bell's vireo is often found in areas that include trees such as willow, sycamore, or cottonwood, particularly where the canopy is within or immediately adjacent to an understory layer of vegetation (Salata 1983). The least Bell's vireo generally nests in early successional stages of riparian habitats, with vireo nest sites frequently located in willows that are between four and ten years of age (RECON 1988; Franzreb 1989). The most critical factor in habitat structure is the presence of a dense understory shrub layer from approximately two feet to ten feet above ground level (Goldwasser 1981; Salata 1983; Franzreb 1989).

On February 2, 1994, the USFWS published a final critical habitat for the least Bell's vireo designating approximately 37,560 acres of land in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties, California (USFWS 1994b). Designated critical habitat in Los Angeles County is located only in the Santa Clara River from the Golden State (I-5) Freeway west to the Ventura County line. The surveyed soft-bottom channel reaches are all located outside the critical habitat for this species.

1.3.3 SOUTHWESTERN WILLOW FLYCATCHER

The southwestern willow flycatcher was formerly a common summer resident of southern California's lowland riparian woodlands and up into mountain canyons (Garrett and Dunn 1981). By the 1970s, the southwestern willow flycatcher was considered to be absent as a breeder in Southern California (McCaskie 1975). The virtual extirpation of this species as a breeder in Southern California has been attributed to the loss and degradation of riparian habitats and brood parasitism by the brown-headed cowbird. All willow flycatchers breeding in California—which include the subspecies *E. t. brewsteri* and *E. t. adastus* in addition to the southwestern willow flycatcher—were listed by the CDFG as State Endangered on January 2, 1991. The USFWS listed the southwestern willow flycatcher as federally Endangered on February 7, 1995 (USFWS 1993).

The willow flycatcher is a neotropical migrant that breeds in the west from northern Baja California, Mexico to central British Columbia, Canada and generally east through the northern half of the United States to the Atlantic coast (AOU 1998). The willow flycatcher winters in Central America from Nayarit, Mexico (Pacific coast) and Honduras (Gulf of Mexico coast) to Panama and also to northern Colombia and northwest Venezuela (Sedgwick 2000). Depending on the authority, there are four or five recognized subspecies of willow flycatcher (Sedgwick 2000). The breeding range of the southwestern willow flycatcher includes Southern California, Arizona, New Mexico, western Texas, and extreme southern parts of Nevada and Utah (USFWS 1993).

The California population of southwestern willow flycatchers breeds along the coast north of Baja California to the Santa Ynez River, Santa Barbara County, and north in the interior to about Independence, Inyo County (Unitt 1987). Besides the Colorado River, there are five drainages in California that support major breeding populations of southwestern willow flycatcher: the South Fork of the Kern River in Kern County; the Santa Margarita River on Camp Pendleton and the San Luis Rey River in San Diego County; the Santa Ana River in Riverside and San Bernardino Counties; and the Owen's River in Inyo and Mono Counties (Durst et al. 2007). In the 1970s, the southwestern willow flycatcher was believed to have been extirpated from coastal Southern California (Remsen 1978), but small numbers were found during the late 1970s and early 1980s in San Diego County (Unitt 1984). An early population estimate for the southwestern willow flycatcher in California was 70 pairs (USFWS 1993). More recent population estimates are higher—such as 200 territories in 2004 and 190 territories in 2006 (Durst et al. 2005; Durst et al. 2007)—and are more likely the result of increased survey effort rather than a population increase (Durst et al. 2007).

The southwestern willow flycatcher breeds in willow-dominated riparian habitats that are similar to least Bell's vireo nesting habitats. The southwestern willow flycatcher differs from least Bell's vireo in that it shows a stronger dependency on willow thickets for all its requirements (Grinnell and Miller 1986). In addition, the southwestern willow flycatcher appears to have a preference for sites with surface water in the vicinity, such as along streams, on the margins of a pond or lake, and at wet mountain meadows (Grinnell and Miller 1986; Flett and Sanders 1987; Harris et al. 1987); in Arizona, the southwestern willow flycatcher invariably nests near surface water (Phillips et al. 1964). Recently, the southwestern willow flycatcher has adapted to introduced vegetation present in riparian vegetation types, such as tamarisk (*Tamarix* sp.) and Russian olive (*Elaeagnus angustifolia*) (USFWS 1993).

The willow flycatcher is a common migrant in the interior of California and is a rare to uncommon migrant along the coastal slope, with most birds moving through Southern California between May 15 and June 20 during the spring season (Garrett and Dunn 1981; Unitt 1987). The spring southwestern willow flycatcher migration is earlier than that of the northern subspecies (Unitt 1987; USFWS 1993). As a result, surveys for nesting southwestern willow flycatcher are complicated by the presence of more abundant subspecies migrating through its range during its breeding season.

On October 19, 2005, the USFWS published a Final Rule designating critical habitat for the southwestern willow flycatcher (USFWS 2005). This final rule designated 120,824 acres in Arizona, California, Nevada, New Mexico, and Utah as critical habitat. Of that, 17,212 acres were designated as Critical habitat in Kern, Santa Barbara, San Bernardino, and San Diego Counties, California. Following lawsuits, the USFWS recently issued a revised Final Rule on January 3, 2013. This Final Rule designates critical habitat that covers 2,090 stream miles in California, Nevada, Utah, Colorado, Arizona, and New Mexico (USFWS 2013). This Final Rule uses a slightly different methodology to designate critical habitat. For example, it includes areas that are considered essential for the recovery of the species even if they were not occupied at the time of the species' listing. These new stream segments include Castaic Creek (3.0 miles), Little Tujunga (1.4 miles), Big Tujunga (3.0 miles), and the San Gabriel River (8.8 miles) (USFWS 2013). Three Castaic Creek channel reaches (Reaches 87, 97, and 104), four Santa Clara River channel reaches (Reaches 71, 80, 82, and 109), and one San Gabriel River channel reach (Reach 39) are located within this proposed revised critical habitat.

SECTION 2.0 SURVEY METHODOLOGIES

For each species surveyed, the surveys were conducted according to USFWS protocols. The biologists conducted the surveys at the most appropriate time of day to ensure maximum opportunity to observe the species.

2.1 SPECIAL STATUS AMPHIBIAN SPECIES

2.1.1 ARROYO TOAD

The initial studies conducted in 2002 included a background literature review and habitat assessment for each of the soft-bottom channel reaches that represented suitable arroyo toad breeding and/or upland habitat. The literature review included the documentation of relevant literature regarding the presence of the arroyo toad within and/or adjacent to each reach, including areas both upstream and downstream. This included review of *Federal Register* listings, protocols, and species data provided by the USFWS, the CDFW's <u>California Natural Diversity Database</u> (CNDDB); consultation with qualified experts familiar with the distribution and natural history of the arroyo toad; and review of unpublished biological resource letter reports and assessments conducted within the region.

Focused surveys for the arroyo toad were conducted at 11 channel reaches in 2013: Castaic Creek Reaches 86, 87, and 97, and Reach 104 in the Castaic Creek Watershed; San Francisquito Canyon Channel Reach 105; the northern part of the South Fork Santa Clara River Reach 75 (i.e., from Magic Mountain Parkway upstream to the Via Princessa Bridge) and the South Fork Santa Clara River Reach 79; Reach 80 at the confluence of the Santa Clara and South Fork Santa Clara Rivers; and Santa Clara River Reaches 71, 82, and 109.

The surveys followed the guidelines presented in the USFWS' *Survey Protocol for the Arroyo Toad* (1999b). Each channel reach was surveyed on foot to characterize aquatic (breeding) and upland habitat (refugia) types and to document any characteristic sign (clutches, larvae, juveniles, adults). Also, in accordance with the USFWS protocol, areas within 0.6 mile of documented arroyo toad sites (previously documented by the presence of eggs, larvae, juveniles, or adults) that have suitable habitat were presumed to have arroyo toads (USFWS 1999b). In addition to following the guidelines outlined above, all field surveys adhered to recommended equipment decontamination procedures outlined in Appendix B of the California red-legged frog survey guidelines (USFWS 2005b).

Six surveys following USFWS recommended protocol were conducted at each of the channel reaches. These surveys included both a diurnal and nocturnal component. The initial (diurnal) surveys included walking each reach in an effort to assess and document the suitability of breeding and upland habitat for the arroyo toad. These initial surveys also focused on locating any areas of inundation that may have represented suitable breeding pools (egg clutches and/or tadpoles). These surveys identified portions within each reach with the highest probability to support the arroyo toad. Following the initial surveys, areas identified during the daytime surveys were visited again at night in order to detect active toads. The same routes were covered repeatedly throughout the evening to ensure that no individuals went undetected. Survey data is presented in Table 1. A list of all wildlife species encountered during these surveys is included in Appendix C.

TABLE 1 ARROYO TOAD SURVEY DATA

				Survey Conditions			
Survey Number	Survey Date	Reaches Surveyed	Surveying Biologists	Temperature (°F)	Relative Humidity (%)	Wind (mph)	Moon Phase
1a	3/26/2013	86, 87, 97, 104	Sam Stewart Jonas Winbolt	50–77	30–80	0–10	Waxing gibbous
1b	3/27/2013	75, 79, 80, 105	Sam Stewart Jonas Winbolt	50–74	45–82	0–7	Full
1c	3/28/2013	71, 82, 109	Sam Stewart Jason Mintzer	50–72	54–84	0–5	Waning gibbous
2a	4/2/2013	86, 87, 97, 104	Sam Stewart Jason Mintzer	51–66	30–90	0–5	Waning crescent
2b	4/3/2013	75, 79, 80, 105	Sam Stewart Sarah Thomas	55–74	39–71	0–7	Waning crescent
2c	4/4/2013	71, 82, 109	Sam Stewart Jason Mintzer	60–80	30–72	0–6	Waning crescent
3a	4/15/2013	86, 87, 97, 104	Sam Stewart Jason Mintzer	58–81	30–71	0–7	Waxing crescent
3b	4/17/2013	71, 82, 109	Sam Stewart Jason Mintzer	50–69	10–20	0–9	Waxing crescent
3с	4/18/2013	75, 79, 80, 105	Sam Stewart Jason Mintzer	50–76	10–40	0–4	Waxing crescent
4a	5/1/2013	86, 87, 97, 104	Sam Stewart Jason Mintzer	60–88	10–15	0–11	3 rd quarter
4b	5/2/2013	75, 79, 80, 105	Sam Stewart Jason Mintzer	57–86	10–14	0–15	Waning crescent
4c	5/3/2013	71, 82, 109	Sam Stewart Jason Mintzer	57–97	10–40	0–8	Waning crescent
5a	5/16/2013	71, 82, 109	Sam Stewart Jason Mintzer	57–75	60–80	0–7	Waxing crescent
5b	5/23/2013	86, 87, 97, 104	Sam Stewart Jason Mintzer	54–73	45–60	0–13	Waxing gibbous
5c	5/28/2013	75, 79, 80, 105	Sam Stewart Jonas Winbolt	68–80	35–45	0–15	Waning gibbous
6a	6/18/2013	86, 87, 97, 104	Sam Stewart Jason Mintzer	64–88	35–65	0–5	Waxing gibbous
6b	6/19/2013	75, 79, 80, 105	Sam Stewart Jason Mintzer	66–88	12–25	0–10	Waxing gibbous
6c	6/20/2013	71, 82, 109	Sam Stewart Jason Mintzer	75–88	20–38	0–8	Waxing gibbous
°F: degrees Fa	°F: degrees Fahrenheit; mph: miles per hour.						

2.2 **SPECIAL STATUS BIRD SPECIES**

The initial literature review in 2002 included all relevant and available documentation on the presence of the least Bell's vireo and southwestern willow flycatcher in Los Angeles County. This included review of *Federal Register* listings, protocols, and species data provided by the USFWS; review of the CDFW's CNDDB; consultation with qualified experts familiar with the distribution and natural history of the least Bell's vireo and southwestern willow flycatcher; and review of unpublished biological resource letter reports and assessments.

Based on the results of prior BonTerra Consulting surveys (2011 focused surveys and annual monitoring surveys) of the channel reaches, the 2013 focused surveys for the least Bell's vireo and southwestern willow flycatcher were conducted at a total of 21 channel reaches where they have potential to occur: 3 channel reaches in the Los Angeles River/San Pedro Bay Area (Reaches 12, 14, and 27); 1 channel reach in the Malibu Creek Watershed (Reach 28); 4 channel reaches in the San Gabriel River (Reaches 39, 40b, 43a, and 43b); and 13 channel reaches in the Santa Clara River and Castaic Creek drainages (Reaches 71, 75, 79, 80, 82, 87, 97, 103, 104, 105, 106, 109, and 110). The channel reaches were surveyed by BonTerra Consulting Biologists Brian Daniels (USFWS Recovery Permit No. 821401-4), Lindsay Messett, Amber Oneal Heredia (USFWS Recovery Permit No. 148554-2), and Steve Morris as well as Consulting Biologist James Pike (USFWS Recovery Permit No. 832946-4). Surveys followed the USFWS protocol for both species; surveys for southwestern willow flycatcher were conducted by permitted individuals.

The USFWS survey protocol for southwestern willow flycatcher was updated in June 2010 (Sogge et al. 2010). The changes affected the timing of surveys, but not the number of surveys or the method of conducting each survey. A minimum of five surveys must be performed for the southwestern willow flycatcher to determine absence of that species from a project site. The five surveys must be performed within three specified time periods at least five days apart. The first survey must be conducted between May 15 and May 31; two surveys are required in the second survey window from June 1 to June 24; and two surveys need to be conducted between June 25 and July 17. The survey protocol for least Bell's vireo remains the same with a minimum of eight surveys being conducted at least ten days apart between April 10 and July 31. Surveys for the least Bell's vireo and southwestern willow flycatcher can be performed simultaneously because of their similar habitat requirements.

The survey area consisted of all riparian habitats in each reach. The riparian habitat was systematically surveyed by walking slowly and methodically along two transects (downstream then upstream or the reverse) with some variance depending on streambed width. Recorded vocalizations of southwestern willow flycatcher were used to elicit a response from any potentially territorial southwestern willow flycatcher; recorded vocalizations of least Bell's vireo were not used according to the protocol for this species. If no southwestern willow flycatchers were detected after the initial playing of the vocalization, the recording was usually replayed at least once. Any observations of willow flycatcher (all subspecies) and least Bell's vireo, including any pertinent behavior, were recorded and their locations mapped in the field. It should be noted that all subspecies of the willow flycatcher breeding in California are listed as State Endangered species; however, only breeding locations are protected.

The surveys were conducted under optimal weather conditions and during the early morning hours when bird activity is at its peak. Numbers were recorded for all bird species detected during the surveys, including notable observations of any special status species or other birds such as the brown-headed cowbird. Survey data is presented in Table 2. Daily tallies of all bird species recorded during these surveys are included in Appendix B.

TABLE 2 SPECIAL STATUS BIRD SURVEY DATA

Reaches Surveyed	Survey Dates	Surveying Biologist		
	4/10/2013			
	4/20/2013	Steve Morris		
	4/30/2013			
	5/10/13			
12, 14, 39	5/23/2013			
	6/10/2013			
	6/17/2013	Brian Daniels		
	6/25/2013			
	7/5/2013			
	4/15/2013			
	4/25/2013			
	5/5/2013	Steve Morris		
	5/15/2013			
27, 28	5/29/2013			
, -	6/12/2013			
	6/21/2013	Brian Daniels		
	6/28/2013	Silaii Balliolo		
	7/11/2013			
	4/10/2013			
	4/20/2013			
	5/1/2013	James Pike		
	5/11/2013			
40b, 43a	5/22/2013			
40D, 43a	6/1/2013	Jailles Fike		
	6/14/2013			
	6/28/2013			
	7/12/2013			
	4/11/2013			
	4/21/2013			
	5/3/2013			
	5/12/2013			
71 75 70 90		Jamaa Dika		
71, 75, 79, 80	5/23/2013 6/2/2013	James Pike		
	6/2/2013			
	6/30/2013			
	7/13/2013			
	4/10/2013	Lindsay Messett		
	4/23/2013			
	5/3/2013			
00 405 400	5/13/2013			
82, 105, 109	5/24/2013	Brian Daniels		
	6/11/2013			
	6/18/2013			
	6/26/2013			
	7/9/2013			

TABLE 2 SPECIAL STATUS BIRD SURVEY DATA

Reaches Surveyed	Survey Dates	Surveying Biologist	
	4/11/2013		
	4/24/2013	Lindaay Magaatt	
	5/7/2013	Lindsay Messett	
	5/17/2013		
103, 110	5/30/2013	Brian Daniels	
	6/13/2013		
	6/20/2013		
	6/27/2013		
	7/10/2013		
	4/16/2013		
	4/29/2013	Lindsay Messett	
	5/9/2013		
97 97 404 406	5/22/2013		
87, 97 104, 106	6/7/2013		
	6/18/2013	Amber Oneal Heredia	
	7/2/2013		
	7/12/2013		

SECTION 3.0 SURVEY RESULTS

The following section presents the results of the 2013 focused surveys conducted within the survey areas described above in Section 1.1.2. No arroyo toads were observed during these surveys. Least Bell's vireo territories were established in Reaches 14, 27, 39, 40b, and 43a these surveys (see Table ES-1). A migrant male least Bell's vireo was observed on only one survey date (April 11, 2013) in Reach 80. Migrant willow flycatchers were observed in four channel reaches (Reaches 40b, 82, 105, and 109), but no southwestern willow flycatcher territories were established during these 2013 surveys. The details of these observations are provided below and grouped by watershed, including Los Angeles River Watershed/San Pedro Bay and the Santa Clara River Watershed. Table ES-1 in the Executive Summary at the beginning of the report summarizes the 2013 survey results. Los Angeles River Watershed/San Pedro Bay

3.1.1 REACH 14 - MAY CHANNEL (MAIN CHANNEL OUTLET INTO PACOIMA CANYON)

Least Bell's Vireo

Two least Bell's vireo territories were established in Reach 14 during these surveys (Exhibits 23 and 24). The solitary (unpaired) male (shown as LBV1 on Exhibits 23 and 24) occupied both the main channel outlet on the west side of Pacoima Wash as well as the northernmost drainage on the east side of Pacoima Wash from April 10 to May 23, but not thereafter. This solitary male interacted with a silent LBV, presumed to be a female, on May 23, but appeared to remain unpaired on that date. It is unknown what happened to this male since he was no longer present in the survey area after May 23. The pair (shown as LBV2 on Exhibit 23) constructed a nest in the willows of the southernmost drainage on east side of Pacoima Wash and was observed brooding and feeding fledglings on June 25 (Exhibit A-1). At least two fledglings were present in this territory on July 5.

3.1.2 REACH 27 - WILMINGTON DRAIN

Least Bell's Vireo

One least Bell's vireo territory was established in Reach 27 during these surveys. This territory consisted of a singing male that was first detected on April 25. On April 25, this male wandered upstream and downstream of Lomita Boulevard, but thereafter remained upstream of Lomita Boulevard. This solitary male least Bell's vireo stayed unpaired and remained on territory through at least July 11 (see Exhibits 25 and 26).

3.2 SAN GABRIEL RIVER AREA

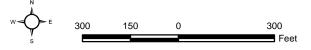
3.2.1 REACH 39 - BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER (25+99.00+50')

Least Bell's Vireo

Two least Bell's vireo territories were established in Reach 39 during these surveys (Exhibits 27 and 28). The territory in the southern part of the survey area next to the pedestrian bridge was paired with a female from April 10 to at least April 30 (shown as LBV1 on Exhibits 27 and 28). This pair occupied the willow clump at the west end of the pedestrian bridge that has supported nesting least Bell's vireo since 2007. The least Bell's vireo territory in the northeastern part of survey area (shown as LBV2 on Exhibits 27 and 28) was solitary (unpaired) from April 10 to May 10, but was found to be paired during the May 23 survey. The pair was observed nest building on May 23; the female was color banded with a combination that showed it was banded

Exhibit 23

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels



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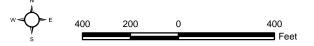
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Reach 27 Least Bell's Vireo Location (Aerial)

Exhibit 25

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels





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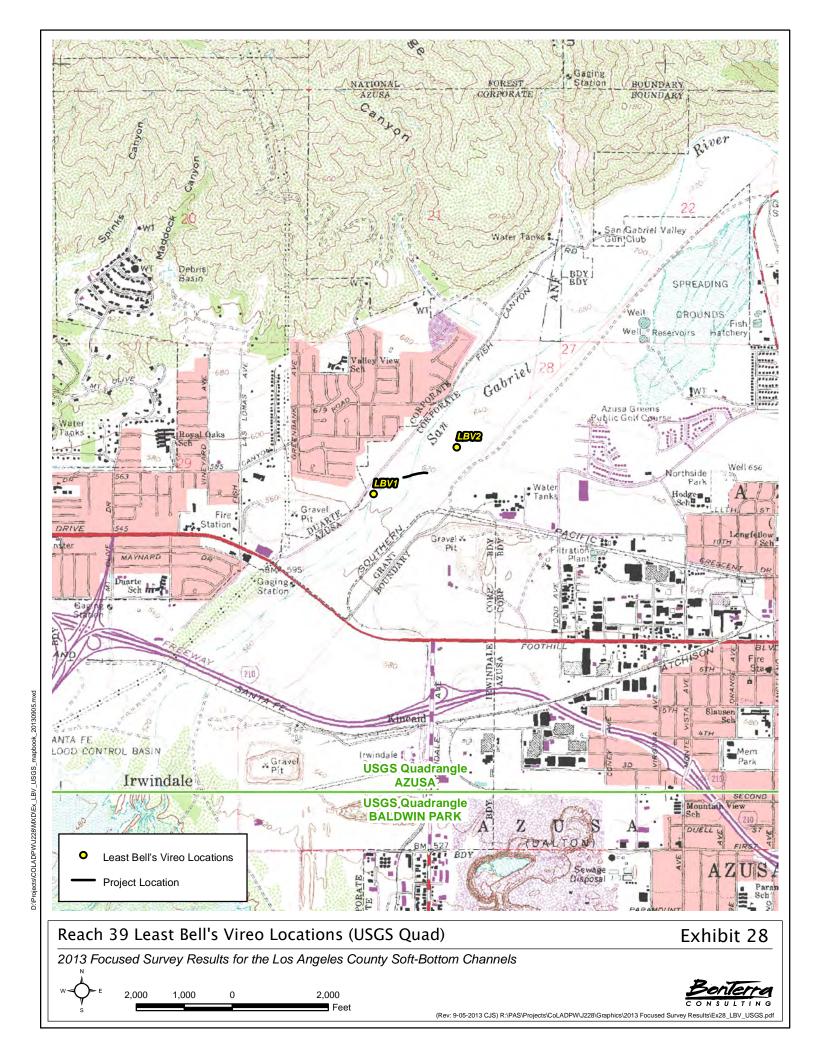
Exhibit 27

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels



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on its wintering grounds in October 2012 near San Jose del Cabo at the southern tip of the Baja California peninsula (Exhibit A-1). The pair at the pedestrian bridge was not detected on May 10 or thereafter. On May 23, a singing male presumed to be the male from the pedestrian bridge pair was at the Beatty channel outlet and engaged in counter-singing with the male least Bell's vireo with color banded female. Only the male with the color-banded female was detected on the June 10 survey, but presumably the same male least Bell's vireo was present at the Beatty channel outlet and again engaged in counter-singing with the paired male during the June 17 survey. Only the male least Bell's vireo (LBV2) was detected during the June 25 and July 5 surveys; the outcome of nesting for this pair was not determined.

3.2.2 REACH 40B - SAN GABRIEL RIVER - SANTA MONICA (I-10) FREEWAY TO THIENES AVENUE

Least Bell's Vireo

Five least Bell's vireo territories were established in Reach 40b during these surveys (Exhibits 29 and 30). The first least Bell's vireo territory (LBV1) consisted of a pair first detected on April 10. This pair had a nest in a narrow-leaved willow that produced four fledglings on June 14. The second least Bell's vireo territory (LBV2) was a pair that was first detected on April 10 and which fledged three young from a nest in narrow-leaved willow in early May. This pair built a second nest in narrow-leaved willow that contained three eggs on July 12. The third territory (LBV3) consisted of a pair that was first detected on April 10 and which built a nest in narrowleaved willow that produced four fledglings in early May. They built a second nest in mule fat that produced four more fledglings in late June. The least Bell's vireo territory (LBV4) just upstream of the first drop structure on Exhibits 29 and 30 was a solitary male that was first detected on April 10 and stayed unpaired through the season. The fifth least Bell's vireo territory (LBV5) consisted of a pair with the male first detected on April 20 and the female on May 1. The nesting outcome of this pair was not determined. Two transient male least Bell's vireos were also detected during these surveys. One transient or wandering male was detected singing on April 20 opposite the end of Thienes Avenue at the confluence of San Jose Creek and the San Gabriel River (11S 0405196 3766823). Presumably this same male was detected in the same general area on May 1, but not again. The second transient male was detected on June 28 upstream of the least Bell's vireo pair (LBV5) closest to the second drop structure upstream from confluence with San Jose Creek.

Southwestern Willow Flycatcher

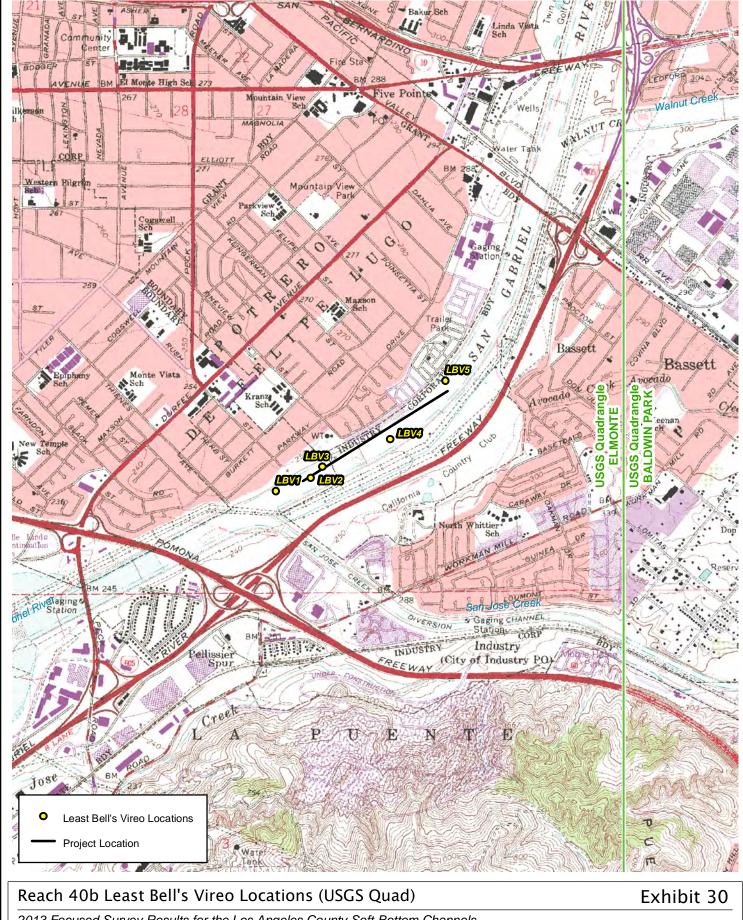
A migrant willow flycatcher was observed in a dry narrow-leaved willow "island" (11S 0406416, 3767690) on June 1. This willow flycatcher was unresponsive to playback of pre-recorded vocalizations.

3.2.3 REACH 43A - SAN GABRIEL RIVER - UPPER

Least Bell's Vireo

Three least Bell's vireo territories were established in Reach 43a during these surveys (Exhibits 31 and 32). The first least Bell's vireo territory (LBV1) consisted of a male first detected on April 10 and a female first detected on May 1. This pair produced two nests, both in mule fat, that each had three eggs. Both nests, however, were depredated. The second least Bell's vireo territory (LBV2) consisted of a male first detected on April 10 followed by the female on April 20; one fledgling was present on May 22 with this pair. The third least Bell's vireo territory (LBV3) consisted of a solitary male that was first detected on April 10 and which stayed unpaired through the season. One transient or wandering male was detected singing on May 22 (11S 0402050, 3764336), but not thereafter.

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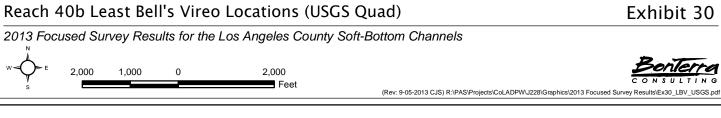


Exhibit 31

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels



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3.3 SANTA CLARA RIVER AREA

3.3.1 REACH 80 - SOUTH FORK - SANTA CLARA RIVER (PDS 1947 AND 1946)

Least Bell's Vireo

One singing male least Bell's vireo was present on April 11 (Exhibits 33 and 34). This migrant stayed for just a few minutes before leaving the survey area. It was on the north bench of the channel in habitat that consisted of patchy tree tobacco (*Nicotiana glauca*), scalebroom (*Lepidospartum squamatum*), and Great Basin sagebrush (*Artemisia tridentata*).

3.3.2 REACH 82 – SANTA CLARA RIVER MAIN CHANNEL (PD 2278)

Southwestern Willow Flycatcher

A migrant willow flycatcher was observed west of the Reach 82 (11S 355509, 3810832) on June 18. It was foraging low in young willows growing in standing water associated with a side outlet. This bird sang and called occasionally, but was unresponsive to playback of pre-recorded vocalizations.

3.3.3 REACH 105 – SAN FRANCISQUITO CHANNEL (PD 2456)

Southwestern Willow Flycatcher

Two migrant willow flycatchers were together and singing upstream of the Decoro Drive bridge and west of the Reach 105 flood-control structures on the left bank (east bank) of the channel (11S 356731, 3812706) on June 18. A very late migrant was present at the left bank side outlet upstream of the Decoro Drive Bridge (11S 356898, 3812686) on June 26. This bird was silent and unresponsive to playback of pre-recorded vocalizations. It left the riparian habitat and foraged in the ornamental trees of the adjacent residential homes. After approximately one hour, it returned to the willow riparian habitat next to the water at the same side outlet where it was initially observed. Mr. Daniels returned early the next morning, June 27, but was not able to find this willow flycatcher. No willow flycatcher was found on July 9. Photos of this bird (see Exhibit A-2) were shared with other observers with expertise on the species, but could not be identified to subspecies. Therefore, this bird is best considered to be a very late migrant of unknown subspecies.

3.3.4 REACH 109 - SANTA CLARA RIVER - SOUTH BANK WEST OF MCBEAN PARKWAY (MTD 1510)

Southwestern Willow Flycatcher

One migrant willow flycatcher was observed west of Reach 109 (11S 356079, 3810302) on June 18. It was calling and foraging in mule fat next to the bike trail on the south bank of the Santa Clara River. It moved north into the river and out of view. Playback of pre-recorded vocalizations brought the bird back into view. It was silent and within a minute or two continued south across the bike trail and open field into an ornamental sycamore in the adjacent apartment complex.

Exhibit 33

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels



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APPENDIX A PHOTO-DOCUMENTATION EXHIBITS



June 25, 2013. View of female least Bell's vireo on nest at Reach 14.



May 23, 2013. View of color-banded least Bell's vireo at Reach 39.

Site Photographs

Exhibit A-1

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels





June 26, 2013. View of very late migrant willow flycatcher at Reach 105.



June 26, 2013. View of very late migrant willow flycatcher at Reach 105.

Site Photographs

Exhibit A-2

2013 Focused Survey Results for the Los Angeles County Soft-Bottom Channels



APPENDIX B BIRD COMPENDIA

APPENDIX B

BIRD COMPENDIA TABLE OF CONTENTS

Reach	<u>Page</u>
Reach 12 – Haines Canyon Main Channel Outlet	A-1
Reach 14 – May Channel (Main Channel Outlet Into Pacoima Canyon)	A-4
Reach 27 – Wilmington Drain	A-7
Reach 28 – Triunfo Creek (PD T2200)	A-10
Reach 39 – Beatty Channel Outlet at San Gabriel River (25+99.00+50')	A-13
Reach 40b – San Gabriel River/Santa Monica (I-10) Freeway to Thienes Avenue	A-17
Reach 43a – San Gabriel River – Upper	A-21
Reach 43b – San Gabriel River – Lower	A-24
Reach 71, 79, and 80 – Santa Clara River Main Channel (PD 1946) South Fork – Santa Clara River (Valencia Blvd. Bridge Stabilizer) South Fork – Santa Clara River (PD's 1947 & 1946)	A-27
Reach 75 – South Fork – SCR (PD's725, 916, 1041, & 1300)	A-30
Reach 82 and 109 – Santa Clara River Main Channel (PD 2278) and Santa Clara River – South Bank West of McBran Pkwy (MTD 1510)	A-33
Reach 87 and 97 – Castaic – Old Road Drain (CDR 525.012D) Outlet and Castaic Creek – The Old Road 2	A-36
Reach 103 – Bouquet Canyon Channel (PD 2225)	A-38
Reach 104 – Castaic Creek (PD 2441 – Unit 2)	A-40
Reach 105 – San Francisquito Channel (PD 2456)	A-42
Reach 106 – Castaic Drain Outlet (RMD Channel)	A-44
Reach 110 – Hasley Canyon Channel (PD 2262)	A-46

REACH 12 HAINES CANYON MAIN CHANNEL OUTLET

				Surve	y Dates -	- 2013			
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul
Mallard (Anas platyrhynchos)	1	2	3		2	2			3
California Quail (Callipepla californica)	1	4	2	6	1	1	1		10
Great Blue Heron (Ardea herodias)	1				1		1		1
Great Egret (Ardea alba)	1								
Green Heron (Butorides virescens)		1		2					
Black-crowned Night-Heron (Nycticorax nycticorax)					1				
Cooper's Hawk (Accipiter cooperii)							1		
Red-tailed Hawk (Buteo jamaicensis)					1				
Rock Pigeon (Columba livia)*			2						
Eurasian Collared-Dove (Streptopelia decaocto)*	2								
Mourning Dove (Zenaida macroura)		8	4	2		3	3	4	5
Black-chinned Hummingbird (Archilochus alexandri)		1				1		1	2
Anna's Hummingbird (Calypte anna)	2	3	4	4	1	1		3	3
Costa's Hummingbird (Calypte costae)		1		2					
Allen's Hummingbird (Selasphorus sasin)	1	1	4	2		1		1	
Allen's/Rufous Hummingbird (Selasphorus sp.)		1	1	2	2	7	4	8	10
Belted Kingfisher (Ceryle alcyon)		1							
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)				1			1	1	1
Downy Woodpecker (Picoides pubescens)							1		1
Black Phoebe (Sayornis nigricans)	1	1		1	1	1	1	1	1
Say's Phoebe (Sayornis saya)	1								
Ash-throated Flycatcher (Myiarchus cinerascens)					1	2	1		1
Cassin's Kingbird (<i>Tyrannus vociferans</i>)	2		1				2	2	2
Western Kingbird (<i>Tyrannus verticalis</i>)									1
Warbling Vireo (Vireo gilvus)				2	3				

REACH 12 HAINES CANYON MAIN CHANNEL OUTLET

	Survey Dates – 2013								
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul
Western Scrub-Jay (Aphelocoma insularis)		1	1	1	1	1	1		1
American Crow (Corvus brachyrhynchos)	2	3	5	3	2		2	6	5
Common Raven (Corvus corax)		1	2	1	3				2
Violet-green Swallow (Tachycineta thalassina)				4					
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	1		4	1	5	4	13	12	1
Cliff Swallow (Petrochelidon pyrrhonota)								2	
Barn Swallow (Hirundo rustica)				1					
Bushtit (<i>Psaltriparus minimus</i>)		5	3						
Red-breasted Nuthatch (Sitta canadensis)			1						
Bewick's Wren (<i>Thryomanes bewickii</i>)	3	2	2	2		4		2	1
Blue-gray gnatcatcher (Polioptila caerulea)		1							
Ruby-crowned Kinglet (Regulus calendula)	1	2							
Western Bluebird (Sialia mexicana)	3	3	1						
Swainson's Thrush (Catharus ustulatus)					2				
American Robin (Turdus migratorius)			1						
Northern Mockingbird (Mimus polyglottos)	1	1	2	1	1			3	5
European Starling (Sturnus vulgaris)*	1	1	1				2	1	
Cedar Waxwing (Bombycilla cedrorum)			5	10					
Phainopepla (Phainopepla nitens)						1	1	1	
Orange-crowned Warbler (Oreothlypis celata)	1								
Common Yellowthroat (Geothlypis trichas)	3	3	1	1	6	3	4	3	4
Yellow Warbler (Setophaga petechia)		1	2	8	5	4	4	4	5
Yellow-rumped Warbler (Setophaga coronata)	12	12							
Wilson's Warbler (Wilsonia pusilla)		1	2	6	2				
Spotted Towhee (Pipilo maculates)	1					2			

REACH 12 HAINES CANYON MAIN CHANNEL OUTLET

				Surve	y Dates -	- 2013			
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul
California Towhee (<i>Melozone crissalis</i>)			2	2	1	2	1	2	
Song Sparrow (<i>Melospiza lincolnii</i>)	5	1	2	3	8	6	4	7	3
Lincoln's sparrow (<i>Melospiza lincolnii</i>)		1							
White-crowned Sparrow (Zonotrichia leucophrys)	11								
Western Tanager (<i>Piranga ludoviciana</i>)			12	1	3				
Black-headed Grosbeak (Pheucticus melanocephalus)			1	2	1				
Blue Grosbeak (<i>Passerina caerulea</i>)								1	1
Lazuli Bunting (Passerina amoena)			1	1					
Red-winged Blackbird (Ageaius phoeniceus)	3	3	2	1					
Brewer's Blackbird (Euphagus cyanocephalus)				1					
Great-tailed Grackle (Quiscalus mexicanus)			2						
Hooded Oriole (Icterus cucullatus)	1	1	1	3	1	1	2	3	3
Bullock's Oriole (Icterus bullockii)		1	1	3	1	4	3	2	
House Finch (Haemorhous mexicanus)	6	6	11	9	8	4	10	8	8
Lesser Goldfinch (Spinus psaltria)	4	7	3	12	8	5	4	3	1
American Goldfinch (Spinus tristis)		1		2					1
House Sparrow (Passer domesticus)*		1				5		2	1
* Introduced non-native species with	established	I breeding p	opulation in	n California					

REACH 14 MAY CHANNEL (MAIN CHANNEL OUTLET INTO PACOIMA CANYON)

	Survey Dates – 2013									
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul	
Canada Goose (Branta canadensis)	2									
Mallard (Anas platyrhynchos)			1	3	1					
California Quail (Callipepla californica)				2		5		10	10	
Cooper's Hawk (<i>Accipiter cooperii</i>)	1			1						
Red-shouldered Hawk (Buteo lineatus)	1	1					1	1		
Killdeer (Charadrius vociferous)					2					
Rock Pigeon (Columba livia)*		3								
Eurasian Collared-Dove (Streptopelia decaocto)*			2							
Mourning Dove (Zenaida macroura)	6	6	2	6		1	1		4	
Lesser Nighthawk (Chordeiles acutipennis)			1	1						
White-throated Swift (Aeronautes saxatalis)		1								
Black-chinned Hummingbird (Archilochus alexandri)	1	1			3	1		1		
Anna's Hummingbird (Calypte anna)	5	3	3	4	1		2	1	2	
Costa's Hummingbird (Calypte costae)	1			1						
Allen's/Rufous Hummingbird (Selasphorus sp.)	1	2	1	1		1	2	1	1	
Nuttall's Woodpecker (Picoides nuttallii)	1		1			1	2			
Peregrine Falcon (Falco peregrines)								1		
Hammond's flycatcher (Empidonax hammondii)	1									
Black Phoebe (Sayornis nigricans)					1				1	
Say's Phoebe (Sayornis saya)	1	1	1	2		1				
Ash-throated Flycatcher (Myiarchus cinerascens)	1	1		2	1					
Cassin's Kingbird (<i>Tyrannus vociferans</i>)		2	2			1	1	2		
Western Kingbird (<i>Tyrannus verticalis</i>)	1	2	2	2		1				
Bell's Vireo (Vireo bellii)	2	3	3	3	4	1		1	1	

REACH 14 MAY CHANNEL (MAIN CHANNEL OUTLET INTO PACOIMA CANYON)

	Survey Dates – 2013								
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul
Warbling Vireo (Vireo gilvus)	-	-	-	3					
American Crow (Corvus brachyrhynchos)	3	3	2	6	4	6	5	2	2
Common Raven (Corvus corax)	4	1	6	2	3	6	1	5	4
Violet-green Swallow (<i>Tachycineta thalassina</i>)	1								
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	5	1			2	2	4	6	
Cliff Swallow (Petrochelidon pyrrhonota)	15	2	5	12	6	3	8		4
Barn Swallow (Hirundo rustica)						1			
Bushtit (<i>Psaltriparus minimus</i>)	2	7	9	14		2			
White-breasted Nuthatch (Sitta carolinensis)								1	
Bewick's Wren (<i>Thryomanes bewickii</i>)	3	2	3	3	3	4	2	2	2
Wrentit (Chamaea fasciata)	2	2	1		1		1		1
Swainson's Thrush (Catharus ustulatus)				1	2				
American Robin (Turdus migratorius)						1	1	1	
California Thrasher (Toxostoma redivivum)		1			2		1	1	1
Northern Mockingbird (Mimus polyglottos)		1				1			
European Starling (Sturnus vulgaris)*	4								
Cedar Waxwing (Bombycilla cedrorum)			6	5					
Nashville Warbler (Oreothlypis ruficapilla)			1						
Common Yellowthroat (Geothlypis trichas)	3			3					
Yellow Warbler (Setophaga petechia)		1	2	3					
Yellow-rumped Warbler (Setophaga coronata)	16	2							
Wilson's Warbler (Wilsonia pusilla)		1		4	1				
Spotted Towhee (Pipilo maculates)	2	3	3	4	2	5	3		2
California Towhee (Melozone crissalis)	8	9	8	10	3	5	3		4

REACH 14 MAY CHANNEL (MAIN CHANNEL OUTLET INTO PACOIMA CANYON)

				Surve	y Dates -	- 2013			
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul
Savannah sparrow (Passerculus sandwichensis)	1								
Song Sparrow (<i>Melospiza lincolnii</i>)	3	7	5	7	6	10	2	1	
White-crowned Sparrow (Zonotrichia leucophrys)	15	2							
Western Tanager (<i>Piranga ludoviciana</i>)			2						
Black-headed Grosbeak (Pheucticus melanocephalus)	1	1	1	1	1	1	1		
Blue Grosbeak (<i>Passerina caerulea</i>)			1	1		1			1
Lazuli Bunting (<i>Passerina amoena</i>)	2		2						
Western Meadowlark (Sturnella neglecta)	4								
Brewer's Blackbird (Euphagus cyanocephalus)			2						
Brown-headed Cowbird (Molothrus ater)	1	1		2					
Hooded Oriole (Icterus cucullatus)								1	
Bullock's Oriole (Icterus bullockii)	2			1					
House Finch (Haemorhous mexicanus)	18	11	18	21	25	12	20		
Lesser Goldfinch (Spinus psaltria)	16	9	7	17	8	4	5	4	3
American Goldfinch (Spinus tristis)	5	12	6	12	1	6		1	2
House Sparrow (Passer domesticus)*								16	2
* Introduced non-native species with	established	l breeding p	opulation i	n California					

REACH 27 WILMINGTON DRAIN

	Survey Dates – 2013								
Species	15-Apr	25-Apr	5-May	15-May	29-May	12-Jun	21-Jun	28-Jun	11-Jul
Mallard (Anas platyrhynchos)		2	3		2				
Great Blue Heron (Ardea herodias)		1	1						
Great Egret (Ardea alba)	2		1			1			
Snowy Egret (Egretta thula)		1	1	1		6		1	
Green Heron (Butorides virescens)						1			
Red-shouldered Hawk (Buteo lineatus)		2		1	1				
Western Gull (Larus occidentalis)	3					1		1	
Rock Pigeon (Columba livia)*			20	3	2	2			30
Eurasian Collared-Dove (Streptopelia decaocto)*		1	3	1		1	3	3	
Mourning Dove (Zenaida macroura)	5	7			1	2	4	3	1
Vaux's Swift (Chaetura vauxi)		8							
Anna's Hummingbird (Calypte anna)		2	2	4			1		
Allen's Hummingbird (Selasphorus sasin)	3	3	1	2				1	
Allen's/Rufous Hummingbird (Selasphorus sp.)		2	2	1	3	1	1	1	
Belted Kingfisher (Ceryle alcyon)									
Downy Woodpecker (Picoides pubescens)	1	1		2	1	2	1		
Western Wood-Pewee (Contopus sordidulus)									
Pacific-slope flycatcher (Empidonax difficilis)		1			1				
Black Phoebe (Sayornis nigricans)	3	4	2	3	4	2	2	3	1
Ash-throated Flycatcher (Myiarchus cinerascens)		2							
Western Kingbird (Tyrannus verticalis)		1							
Bell's Vireo (Vireo bellii)		1	1	1	1	1	1	1	1
Warbling Vireo (Vireo gilvus)		3		4					
Western Scrub-Jay (Aphelocoma insularis)		1							
American Crow (Corvus brachyrhynchos)	1	7	4	6		10	1	2	

REACH 27 WILMINGTON DRAIN

				Surve	y Dates -	2013			
Species	15-Apr	25-Apr	5-May	15-May	29-May	12-Jun	21-Jun	28-Jun	11-Jul
Common Raven (Corvus corax)		1	2	2	1			1	
Northern Rough-winged Swallow (Stelgidopteryx serripennis)		4	4	2	4	2	2	1	
Cliff Swallow (Petrochelidon pyrrhonota)		6							
Barn Swallow (Hirundo rustica)		3			7	10	2	6	6
Bushtit (Psaltriparus minimus)	2	1	15	18	15	15	10	10	
Northern Mockingbird (Mimus polyglottos)		4	2	2	1	2	1	3	2
European Starling (Sturnus vulgaris)*	1	2		5	3	5	2	2	
Cedar Waxwing (Bombycilla cedrorum)	12	25	4						
Orange-crowned Warbler (Oreothlypis celata)	1	2	1	5	1				
Common Yellowthroat (Geothlypis trichas)	1		5	3	9	4	2		
Palm Warbler (Dendroica palmarum)		1							
Yellow Warbler (Setophaga petechia)	2	4	9	6	6	6	6	3	4
Yellow-rumped Warbler (Setophaga coronata)	8	9							
Black-throated Gray Warbler (Setophaga nigrescens)		1							
Townsend's Warbler (Setophaga townsendi)		1	2						
Wilson's Warbler (Wilsonia pusilla)	4	3	5	4					
California Towhee (Melozone crissalis)		6	6	4	5	4	3		6
Song Sparrow (Melospiza lincolnii)	2	6	9	7	3	4		5	
White-crowned Sparrow (Zonotrichia leucophrys)	2								
Western Tanager (<i>Piranga ludoviciana</i>)		9	8	3					
Black-headed Grosbeak (Pheucticus melanocephalus)	1	2	1						
Lazuli Bunting (Passerina amoena)		4	1						
Red-winged Blackbird (Ageaius phoeniceus)	1	2	2						
Brown-headed Cowbird (Molothrus ater)	1	5	6	4					
Hooded Oriole (Icterus cucullatus)	4	6	6	2	3	5	4	4	3

REACH 27 WILMINGTON DRAIN

		Survey Dates – 2013								
Species	15-Apr	25-Apr	5-May	15-May	29-May	12-Jun	21-Jun	28-Jun	11-Jul	
Bullock's Oriole (Icterus bullockii)	2	3	3	1	1	1	2		1	
House Finch (Haemorhous mexicanus)	2	25	18	22	25	12	50	20	10	
Lesser Goldfinch (Spinus psaltria)	2	9	8	10	2		6		2	
American Goldfinch (Spinus tristis)				2	3	1				
House Sparrow (Passer domesticus)*		1	2	1	2	3			2	
Nutmeg Mannikin (Lonchura punctulata)**					2	6	2	6	5	

Introduced non-native species with established breeding population in California Exotic or escaped non-native species that may or many not be breeding in California

REACH 28 TRIUNFO CREEK (PD T2200)

	Survey Dates – 2013									
Species	15-Apr	25-Apr	5-May	15-May	29-May	12-Jun	21-Jun	28-Jun	11-Jul	
Mallard (Anas platyrhynchos)	2	4	1	1						
California Quail (Callipepla californica)	1							10	5	
Common Peafowl (Pavo cristatus)**	2	9	6	2	5	4	1	3	2	
Great Blue Heron (Ardea herodias)	1	1			1				1	
Snowy Egret (Egretta thula)		1								
Green Heron (Butorides virescens)	1									
Black-crowned Night-Heron (Nycticorax nycticorax)								1		
Red-shouldered Hawk (Buteo lineatus)		1			1	2	2	3	2	
Band-tailed Pigeon (<i>Patagioenas fasciata</i>)		1			5		1	1		
Mourning Dove (Zenaida macroura)			1					1	3	
Western screech owl (Megascops kennicottii)					1					
Black-chinned Hummingbird (Archilochus alexandri)					1					
Anna's Hummingbird (Calypte anna)	2	2	1	1				3		
Allen's/Rufous Hummingbird (Selasphorus sp.)	1									
Acorn Woodpecker (Melanerpes formicivorus)		3	4	3	7	3	5	6	4	
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)	1	2	1	2	2	2	1	2	1	
Downy Woodpecker (Picoides pubescens)				1						
Northern Flicker (Colaptes auratus)	1			1	2	1	1	4	1	
Red-crowned Parrot (Amazona viridigenalis)*	5									
Black-hooded Parkeet (Nandayus nenday)**			4	22	2	1	2	17	5	
Pacific-slope Flycatcher (Empidonax difficilis)	1	1	2	3	2	4	2	1	1	
Black Phoebe (Sayornis nigricans)	1	1			2	1	4	2		
Ash-throated Flycatcher (Myiarchus cinerascens)			2	2	3	2	1	2	1	
Cassin's Kingbird (<i>Tyrannus vociferans</i>)		2					1			
Warbling Vireo (Vireo gilvus)					1					

REACH 28 TRIUNFO CREEK (PD T2200)

				Surve	y Dates -	- 2013			
Species	15-Apr	25-Apr	5-May	15-May	29-May	12-Jun	21-Jun	28-Jun	11-Jul
Western Scrub-Jay (Aphelocoma insularis)		1	2	1	4		2	5	
American Crow (Corvus brachyrhynchos)	2	12	7	11	12	17	10	7	19
Common Raven (Corvus corax)	1	1							
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	1	1		2	1				
Oak Titmouse (Baeolophus inornatus)	2	2			3	2	4	3	2
Bushtit (Psaltriparus minimus)			5				2		
White-breasted Nuthatch (Sitta carolinensis)	1	2			2	3	3	2	2
House Wren (<i>Troglodytes aedon</i>)	6	8	9	9	6	7	2		
Blue-gray gnatcatcher (Polioptila caerulea)		1		1					
Wrentit (Chamaea fasciata)	2		1		1	1	1	2	
Western Bluebird (Sialia mexicana)				1	1	1			
Swainson's Thrush (Catharus ustulatus)						1			
European Starling (Sturnus vulgaris)*		5	6	2	8		2	3	2
Orange-crowned Warbler (Oreothlypis celata)	1		1	3	2	1	1		
Yellow Warbler (Setophaga petechia)	1	1	1		1		2		
Yellow-rumped Warbler (Setophaga coronata)	1								
Spotted Towhee (Pipilo maculates)	3		3	3	6	5	4	5	1
Rufous-crowned Sparrow (Aimophila ruficeps)							1		
California Towhee (<i>Melozone crissalis</i>)	2	1	1	4	1		2	1	1
Song Sparrow (<i>Melospiza lincolnii</i>)	2	2		2	6	1	6	6	4
Dark-eyed Junco (Junco hyemalis)							2		
Western Tanager (<i>Piranga ludoviciana</i>)		1	1		2	1			
Black-headed Grosbeak (Pheucticus melanocephalus)		3			1	3	2	1	3
Red-winged Blackbird (Ageaius phoeniceus)		1	1						1
Brown-headed Cowbird (Molothrus ater)	1	2		1	2	3	1		1

REACH 28 TRIUNFO CREEK (PD T2200)

		Survey Dates - 2013									
Species	15-Apr	25-Apr	5-May	15-May	29-May	12-Jun	21-Jun	28-Jun	11-Jul		
Hooded Oriole (Icterus cucullatus)	1		3		1	3	2	1			
Bullock's Oriole (Icterus bullockii)	1	2		1	2	6	5	1			
House Finch (Haemorhous mexicanus)	4	5	5	14	20	17	12	15	18		
Lesser Goldfinch (Spinus psaltria)	1	8	12	9	6	7	2	5	4		

Introduced non-native species with established breeding population in California Exotic or escaped non-native species that may or many not be breeding in California

REACH 39 BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER 25+99.00+50'

	Survey Dates – 2013									
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul	
Mallard (Anas platyrhynchos)	1									
California Quail (Callipepla californica)	5	3	4	2			4		10	
Great Egret (Ardea alba)						1				
Turkey Vulture (Cathartes aura)	4		1	2		2	2		1	
Cooper's Hawk (Accipiter cooperii)					1	1	1			
Red-tailed Hawk (Buteo jamaicensis)	2						2			
Red-shouldered Hawk (Buteo lineatus)				1					1	
Killdeer (Charadrius vociferous)	2	1		1						
Greater Yellowlegs (<i>Tringa melanoleuca</i>)	1									
Rock Pigeon (Columba livia)*	3			20	2		20			
Band-tailed Pigeon (Patagioenas fasciata)										
Mourning Dove (Zenaida macroura)	3	3	2	8	5	3	4	3	18	
Yellow-chevroned Parakeet (Brotogeris chiriri)**						7				
Red-crowned Parrot (Amazona viridigenalis)*							2	2	2	
Lesser Nighthawk (Chordeiles acutipennis)				1						
Vaux's Swift (Chaetura vauxi)				3						
White-throated Swift (Aeronautes saxatalis)	1	1		2		2	2			
Black-chinned Hummingbird (Archilochus alexandri)				1	1	1	1			
Anna's Hummingbird (Calypte anna)	6	9	4	3	3	1	2		1	
Costa's Hummingbird (Calypte costae)			2				1			
Allen's Hummingbird (Selasphorus sasin)	1	1			1		1			
Allen's/Rufous Hummingbird (Selasphorus sp.)		1		2	1		2			
Acorn Woodpecker (Melanerpes formicivorus)				1	1	1	1			
Nuttall's Woodpecker (Picoides nuttallii)		1	1	2	1			1	1	

REACH 39 BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER 25+99.00+50'

	Survey Dates – 2013									
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul	
Downy Woodpecker (Picoides pubescens)		1								
Parakeet Sp. (Psittacidae sp.)**		2								
Parrot Sp. (Psittacidae sp)**		2								
Black Phoebe (Sayornis nigricans)		4	3	2	2	1	4			
Ash-throated Flycatcher (Myiarchus cinerascens)		1						1		
Cassin's Kingbird (Tyrannus vociferans)								2		
Western Kingbird (Tyrannus verticalis)			1	1						
Bell's Vireo (Vireo bellii)	3	2	3	1	3	1	2	1		
Hutton's Vireo (Vireo huttoni)					1					
Warbling Vireo (Vireo gilvus)					2					
Western Scrub-Jay (Aphelocoma insularis)	1	2	3		1		2	3	1	
American Crow (Corvus brachyrhynchos)		4		6		3		1	4	
Common Raven (Corvus corax)	2	1	1	2	3	3	3		1	
Red-whiskered Bulbul (Pycnonotus jocosus)**							1			
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	4	1	2	5	4	2	6		6	
Cliff Swallow (Petrochelidon pyrrhonota)	1	8	4	21	2	25	5	10	5	
Barn Swallow (Hirundo rustica)		1								
Bushtit (<i>Psaltriparus minimus</i>)	6		23	6		10	2			
Red-breasted Nuthatch (Sitta canadensis)		1								
House Wren (<i>Troglodytes aedon</i>)		1		1	1					
Bewick's Wren (Thryomanes bewickii)	3	3	4	2	5	6	3	1	1	
Blue-gray gnatcatcher (Polioptila caerulea)		2								
Wrentit (Chamaea fasciata)	4	4	2	2	5	4	10	4	5	
Swainson's Thrush (Catharus ustulatus)					1				_	

REACH 39 BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER 25+99.00+50'

	Survey Dates – 2013									
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul	
Northern Mockingbird (Mimus polyglottos)	5	5	5	6	3	11	8	6	5	
California Thrasher (Toxostoma redivivum)	1	3	2	2	2	1	1	1	1	
European Starling (Sturnus vulgaris)*				2						
Cedar Waxwing (Bombycilla cedrorum)			7	5						
Phainopepla (Phainopepla nitens)		1		3	8	5	4	2	2	
Common Yellowthroat (Geothlypis trichas)	7	11	3	7	6	5	4	2	3	
Yellow Warbler (Setophaga petechia)	1	2	2	2		2	1		1	
Yellow-rumped Warbler (Setophaga coronata)	1									
Wilson's Warbler (Wilsonia pusilla)				3	1					
Yellow-breasted Chat (Icteria virens)		1	2		3	2	3		1	
Spotted Towhee (Pipilo maculates)	6	4	4	6	8	5	8	5		
California Towhee (Melozone crissalis)	9	10	10	12	7	6	4	3	5	
Song Sparrow (Melospiza lincolnii)	8	16	15	15	20	1	2		5	
Lincoln's sparrow (<i>Melospiza lincolnii</i>)		1								
Western Tanager (<i>Piranga ludoviciana</i>)		1		1						
Black-headed Grosbeak (Pheucticus melanocephalus)		4	4	5	1	2	2	2	1	
Blue Grosbeak (Passerina caerulea)					1					
Lazuli Bunting (<i>Passerina amoena</i>)			1							
Red-winged Blackbird (Ageaius phoeniceus)	1				1					
Brown-headed Cowbird (Molothrus ater)		6	4	4	3	1	4		1	
Hooded Oriole (Icterus cucullatus)		1		1				1		
Bullock's Oriole (Icterus bullockii)		1					1			
Purple Finch (Haemorhous purpureus)	1		2	2	1		2			
House Finch (Haemorhous mexicanus)	16	5	22	20	5	20	30	26	16	

REACH 39 BEATTY CHANNEL OUTLET AT SAN GABRIEL RIVER 25+99.00+50

		Survey Dates – 2013									
Species	10-Apr	20-Apr	30-Apr	10-May	23-May	10-Jun	17-Jun	25-Jun	5-Jul		
Lesser Goldfinch (Spinus psaltria)	11	6	14	11	5	3	4	2			
Lawrence's Goldfinch (Spinus lawrencei)	2										
American Goldfinch (Spinus tristis)	2		2	2	4	5	5				
Nutmeg Mannikin (Lonchura punctulata)**						1	3		8		
Orange Bishop (Euplectes franciscanus)**		2			1		2				

Introduced non-native species with established breeding population in California Exotic or escaped non-native species that may or many not be breeding in California

REACH 40B SAN GABRIEL RIVER – I-10 FREEWAY TO THIENES AVENUE

	Survey Dates – 2013									
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul	
Canada Goose (Branta canadensis)	1									
Mallard (Anas platyrhynchos)	2		3	8	10	4	6		1	
Pied-billed Grebe (Podilymbus podiceps)	3	3		3	4	2	5	3	1	
Double-crested Cormorant (Phalacrocorax auritus)	4			4	1	1	3	1	1	
Great Blue Heron (Ardea herodias)	1	2		1		2		1	1	
Great Egret (Ardea alba)		1		1				1		
Snowy Egret (Egretta thula)					1		3	3		
Green Heron (Butorides virescens)					2		1	1	1	
Black-crowned Night-Heron (Nycticorax nycticorax)							1	1	1	
Turkey Vulture (Cathartes aura)	1	1		1		1			1	
Cooper's Hawk (Accipiter cooperii)		1								
Red-tailed Hawk (Buteo jamaicensis)	1	1				1				
Common Gallinule (Gallinula galeata)	2		1	1			10	4	4	
American Coot (Fulica americana)	5	5	3	2	4	5	5	2	2	
Killdeer (Charadrius vociferous)		4	4	1	2	3	2	4	1	
Black-necked Stilt (Himantopus mexicanus)		2		2	10	3				
American Avocet (Recurvirostra americana)					2					
Spotted Sandpiper (Actitis macularius)								1	2	
Greater Yellowlegs (Tringa melanoleuca)					1					
California Gull (Larus californicus)	25									
Caspian Tern (<i>Hydroprogne caspia</i>)					2		1	1		
Rock Pigeon (Columba livia)*		3					3			
Eurasian Collared-Dove (Streptopelia decaocto)*	2	1	1	1	6	2	5	3	4	
Mourning Dove (Zenaida macroura)	2	3	3		5	3	6	7	9	
White-throated Swift (Aeronautes saxatalis)								3		

REACH 40B SAN GABRIEL RIVER – I-10 FREEWAY TO THIENES AVENUE

				Surve	y Dates -	- 2013			
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul
Anna's Hummingbird (Calypte anna)	3	3	3	3	1	1	2	2	3
Allen's Hummingbird (Selasphorus sasin)		1							
Allen's/Rufous Hummingbird (Selasphorus sp.)	3	1	4	1	2	2	1	3	1
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)					1				
Downy Woodpecker (Picoides pubescens)							1	1	
American Kestrel (Falco sparverius)	1			1	1	2	1		1
Yellow-chevroned Parakeet (Brotogeris chiriri)**					6		6		
Red-crowned Parrot (Amazona viridigenalis)*							6		
Willow Flycatcher (Empidonax traillii)						1			
Black Phoebe (Sayornis nigricans)	5	6	4	6	4	3	5	8	5
Say's Phoebe (Sayornis saya)							1		
Ash-throated Flycatcher (Myiarchus cinerascens)				1		1			
Cassin's Kingbird (<i>Tyrannus vociferans</i>)	2			2		1	3	3	1
Western Kingbird (Tyrannus verticalis)	4	1							
Bell's Vireo (Vireo bellii)	7	6	6	8	5	5	5	6	4
Warbling Vireo (<i>Vireo gilvus</i>)				14					
Western Scrub-Jay (Aphelocoma insularis)				1		1	1	3	1
American Crow (Corvus brachyrhynchos)		1	1				4		8
Common Raven (Corvus corax)	1		1	4		4	1	1	1
Tree Swallow (Tachycineta bicolor)								2	
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	3	6	4	4	4	18	10	28	5
Cliff Swallow (Petrochelidon pyrrhonota)	5	3	3	8	20	25	30	10	5
Barn Swallow (Hirundo rustica)	6	5	4	5	2	3	5	10	4
Bushtit (<i>Psaltriparus minimus</i>)	20	12	26	24	18	12	20	20	25
Bewick's Wren (<i>Thryomanes bewickii</i>)									1

REACH 40B SAN GABRIEL RIVER – I-10 FREEWAY TO THIENES AVENUE

	Survey Dates – 2013										
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul		
Blue-gray gnatcatcher (Polioptila caerulea)	1										
Swainson's Thrush (Catharus ustulatus)			2								
American Robin (Turdus migratorius)	1			1							
Northern Mockingbird (Mimus polyglottos)	9	7	6	7	4	6	6	8	9		
European Starling (Sturnus vulgaris)*	5	12	5	3	5	13	10	14	15		
American Pipit (Anthus rubescens)	8										
Cedar Waxwing (Bombycilla cedrorum)		12									
Orange-crowned Warbler (Oreothlypis celata)	2	1	1								
Common Yellowthroat (Geothlypis trichas)	18	15	11	16	12	13	14	10	4		
MacGillivray's Warbler (Geothlypis tolmiei)				1							
Yellow Warbler (Setophaga petechia)	5	11	17	12	12	12	13	14	9		
Yellow-rumped Warbler (Setophaga coronata)	14	3									
Wilson's Warbler (Wilsonia pusilla)	1		6	4							
Yellow-breasted Chat (Icteria virens)			1	2	1	2	2	1	1		
California Towhee (Melozone crissalis)	5	9	9	7	7	6	5	3	3		
Song Sparrow (Melospiza lincolnii)	20	18	23	26	20	18	13	7	3		
White-crowned Sparrow (Zonotrichia leucophrys)	2										
Western Tanager (<i>Piranga ludoviciana</i>)			1	3							
Black-headed Grosbeak (Pheucticus melanocephalus)	2	3	3	1	1		1				
Blue Grosbeak (Passerina caerulea)					1		2	1	2		
Red-winged Blackbird (Ageaius phoeniceus)	6		12	2	5	1	8				
Great-tailed Grackle (Quiscalus mexicanus)	12	10	15	13	15	15	15	13	10		
Brown-headed Cowbird (Molothrus ater)		6	2	1	1	2					
Hooded Oriole (Icterus cucullatus)	1		2	2	1		3	1	4		
Bullock's Oriole (Icterus bullockii)	3	4	5	4	4	2	6	3	3		

REACH 40B SAN GABRIEL RIVER - I-10 FREEWAY TO THIENES AVENUE

	Survey Dates – 2013									
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul	
House Finch (Haemorhous mexicanus)	14	14	22	24	12	16	30	18	55	
Lesser Goldfinch (Spinus psaltria)	12	12	8	10	6	5	3	10	5	
American Goldfinch (Spinus tristis)	10		6		2	2	4	1	5	
House Sparrow (Passer domesticus)*	20	15	12	18	18	25	30	25	65	
Nutmeg Mannikin (Lonchura punctulata)**							1			
Orange Bishop (Euplectes franciscanus)**									2	

Introduced non-native species with established breeding population in California Exotic or escaped non-native species that may or many not be breeding in California

REACH 43A SAN GABRIEL RIVER – UPPER

	Survey Dates – 2013									
Species	10-Apr	22-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul	
Canada Goose (<i>Branta canadensis</i>)			2							
Mallard (Anas platyrhynchos)		5	2			1	3			
Cinnamon Teal (Anas cyanoptera)		1								
Pied-billed Grebe (Podilymbus podiceps)				1						
Double-crested Cormorant (Phalacrocorax auritus)		1								
Great Blue Heron (Ardea herodias)	1	1	1		1		2		2	
Great Egret (<i>Ardea alba</i>)		1					1			
Snowy Egret (Egretta thula)		1						1		
Green Heron (Butorides virescens)										
Black-crowned Night-Heron (Nycticorax nycticorax)						1			1	
Sharp-shinned Hawk (Accipiter striatus)	2									
Cooper's Hawk (<i>Accipiter cooperii</i>)	1	1						2		
Red-shouldered Hawk (Buteo lineatus)		1			1			1		
Red-tailed Hawk (Buteo jamaicensis)	1		1							
Common Gallinule (Gallinula galeata)			1		1					
American Coot (<i>Fulica americana</i>)		1								
California Gull (<i>Larus californicus</i>)			1							
Caspian Tern (<i>Hydroprogne caspia</i>)									2	
Forster's Tern (Sterna forsteri)										
Rock Pigeon (<i>Columba livia</i>)*			5		4			1	1	
Eurasian Collared-Dove (Streptopelia decaocta)				1						
Mourning Dove (Zenaida macroura)	1	2	2	2	5	5	5			
White-throated Swift (Aeronautes saxatalis)	3	3			1					
Black-chinned Hummingbird (Archilochus alexandri)		2		1				1		
Anna's Hummingbird (Calypte anna)	2	4	3	3	1	1	2	1	2	
Allen's Hummingbird (Selasphorus sasin)		1	1							

REACH 43A SAN GABRIEL RIVER – UPPER

				Surve	y Dates -	- 2013			
Species	10-Apr	22-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul
Allen's/Rufous Hummingbird (Selasphorus sp.)	3		3	1		3	3	3	
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)		2		1	1			2	1
Downy Woodpecker (Picoides pubescens)	1		2	1		2	2	1	
Yellow-chevroned Parakeet (Brotogeris chiriri)**				5					
Black Phoebe (Sayornis nigricans)	4		2	4	4	1	1	3	4
Say's Phoebe (Sayornis saya)		1							
Ash-throated Flycatcher (Myiarchus cinerascens)			1		1	1			
Cassin's Kingbird (<i>Tyrannus vociferans</i>)									1
Western Kingbird (<i>Tyrannus verticalis</i>)		1							
Bell's Vireo (Vireo bellii)	3	3	3	3	4	3	3	2	1
Hutton's Vireo (Vireo huttoni)								1	
Warbling Vireo (<i>Vireo gilvus</i>)	1	3		2	1				
American Crow (Corvus brachyrhynchos)		2					2	1	2
Common Raven (Corvus corax)	1			2	1				
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	1	1	2			5	3	1	
Cliff Swallow (Petrochelidon pyrrhonota)	30	3	5	12	4	10	20	3	5
Barn Swallow (<i>Hirundo rustica</i>)	1	5		4		3	5		3
Bushtit (<i>Psaltriparus minimus</i>)	14	10	20	22	20	18	20	25	25
House Wren (<i>Troglodytes aedon</i>)	2	1		2			2		
Bewick's Wren (<i>Thryomanes bewickii</i>)		2	2	1			1	1	
Swainson's Thrush (Catharus ustulatus)			1	3	3	3	1	1	1
American Robin (<i>Turdus migratorius</i>)	1	2	1			1		1	
Northern Mockingbird (Mimus polyglottos)	2	2	1	1	2	1	2	2	2
European Starling (Sturnus vulgaris)*					2	45	1		
Cedar Waxwing (Bombycilla cedrorum)			15	6					
Orange-crowned Warbler (Oreothlypis celata)	2	2	2	1	3	2			

REACH 43A SAN GABRIEL RIVER - UPPER

				Surve	ey Dates -	2013			
Species	10-Apr	22-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul
Common Yellowthroat (Geothlypis trichas)	22	15	19	10	10	12	4	3	3
Yellow Warbler (Setophaga petechia)	15	16	21	17	16	21	16	18	17
Yellow-rumped Warbler (Setophaga coronata)	15	3							
Black-throated Gray Warbler (Setophaga nigrescens)	2								
Townsend's Warbler (Setophaga townsendi)				1					
Yellow-breasted Chat (Icteria virens)	1	2	2	1	2	2	3	3	1
Spotted Towhee (Pipilo maculates)	6	6	8	11	8	6	6	4	3
California Towhee (Melozone crissalis)	2	7	5	4	5	2	5		3
Song Sparrow (<i>Melospiza lincolnii</i>)	18	18	30	21	16	14	4	3	
Northern Cardinal (Cardinalis cardinalis)*					1			1	
Black-headed Grosbeak (Pheucticus melanocephalus)	2	3	4	3	3	2	2	2	2
Blue Grosbeak (Passerina caerulea)			2	2	1		1		1
Lazuli Bunting (<i>Passerina amoena</i>)			2						
Red-winged Blackbird (Ageaius phoeniceus)						6		1	1
Brown-headed Cowbird (Molothrus ater)	4	2	3	2	3	3	3	3	6
Hooded Oriole (Icterus cucullatus)				1	4	1	1	2	2
Bullock's Oriole (Icterus bullockii)	1	2	1	1	2	3	1	2	
House Finch (Haemorhous mexicanus)	12	14	16	22	14	25	60	25	40
Lesser Goldfinch (Spinus psaltria)	14	16	12	16	20	25	25	18	6
American Goldfinch (Spinus tristis)	6	5	5	1	5	10	1	2	15
Nutmeg Mannikin (Lonchura punctulata)**							3		1

 ^{*} Introduced non-native species with established breeding population in California
 ** Exotic or escaped non-native species that may or many not be breeding in California

REACH 43B SAN GABRIEL RIVER – LOWER

	Survey Dates – 2013								
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul
Mallard (Anas platyrhynchos)	1	4	25	4	2	1	3	2	3
Double-crested Cormorant (Phalacrocorax auritus)	1						1		
Great Blue Heron (Ardea herodias)	2	2		1					1
Great Egret (<i>Ardea alba</i>)			1	1					2
Snowy Egret (<i>Egretta thula</i>)			1		1			2	2
Black-crowned Night-Heron (Nycticorax nycticorax)				3				1	
Cooper's Hawk (Accipiter cooperii)		1	1						
Red-tailed Hawk (<i>Buteo jamaicensis</i>)	1		2		1				
Common Gallinule (Gallinula galeata)			50						
Killdeer (Charadrius vociferous)	3	1		1		3			
Spotted Sandpiper (Actitis macularius)	1								
Western Gull (Larus occidentalis)	1				6		2	5	2
Rock Pigeon (Columba livia)*	5	5	2	3		3	6		2
Eurasian Collared-Dove (Streptopelia decaocto)	5	4	1	5	4	1	3	3	6
Mourning Dove (Zenaida macroura)	4	3	3	1	3	3	5	2	12
White-throated Swift (Aeronautes saxatalis)	4	2		5					
Anna's Hummingbird (<i>Calypte anna</i>)	3	3	1	1	2	1	1	2	2
Allen's Hummingbird (Selasphorus sasin)	2						1		
Allen's/Rufous Hummingbird (Selasphorus sp.)		4	1		1	5	7	5	10
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)	1		1	2					
Downy Woodpecker (<i>Picoides pubescens</i>)			1			1			
American Kestrel (Falco sparverius)				1					
Black Phoebe (Sayornis nigricans)	6	2	6	4	5	3	3	4	4
Ash-throated Flycatcher (Myiarchus cinerascens)	1	1			1				
Cassin's Kingbird (<i>Tyrannus vociferans</i>)	3	3	3	3	2	3	3	3	3

REACH 43B SAN GABRIEL RIVER – LOWER

	Survey Dates – 2013									
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul	
Western Kingbird (Tyrannus verticalis)	1						1			
Cassin's Vireo (Vireo cassinii)		1		1						
Warbling Vireo (Vireo gilvus)		1			1					
Western Scrub-Jay (Aphelocoma insularis)			1							
American Crow (Corvus brachyrhynchos)			2				1	2	5	
Common Raven (Corvus corax)	2				1		1	2		
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	2	3	1		2	4	5		1	
Cliff Swallow (Petrochelidon pyrrhonota)	30	8	30	15	15	40	35	20	25	
Barn Swallow (Hirundo rustica)	1	4	4	3	1	8	10	1	3	
Bushtit (Psaltriparus minimus)	12	10	12	20	16	12	10	12	15	
Northern Mockingbird (Mimus polyglottos)	8	6	6	8	7	82	6	6	7	
European Starling (Sturnus vulgaris)*	16	22	5	6	3	8		5	1	
Cedar Waxwing (Bombycilla cedrorum)	3	2								
Orange-crowned Warbler (Oreothlypis celata)	1		1							
Nashville Warbler (Vermivora ruficapilla)	1	2								
Common Yellowthroat (Geothlypis trichas)	14	5	7	6	2	4	4	1	1	
Yellow Warbler (Setophaga petechia)	3	8	10	11	8	8	9	9	4	
Yellow-rumped Warbler (Setophaga coronata)	13	3								
Black-throated Gray Warbler (Setophaga nigrescens)	1	3								
Wilson's Warbler (Wilsonia pusilla)		1	1							
Spotted Towhee (Pipilo maculates)			1			1				
California Towhee (<i>Melozone crissalis</i>)	6	4	8	3	7	3	3	4	2	
Song Sparrow (Melospiza lincolnii)	12	9	10	13	16	8	5	4	1	
Lincoln's Sparrow (Melospiza lincolnii)	1									
White-crowned Sparrow (Zonotrichia leucophrys)	5									

REACH 43B SAN GABRIEL RIVER - LOWER

	Survey Dates – 2013								
Species	10-Apr	20-Apr	1-May	11-May	22-May	1-Jun	14-Jun	28-Jun	12-Jul
Blue Grosbeak (<i>Passerina caerulea</i>)		2	2	1		1	2	4	2
Red-winged Blackbird (Ageaius phoeniceus)	5	5			3		8	20	14
Brewer's Blackbird (Euphagus cyanocephalus)		3							
Great-tailed Grackle (Quiscalus mexicanus)	4								
Brown-headed Cowbird (Molothrus ater)	6	12	3	2	3	6	2	1	2
Hooded Oriole (Icterus cucullatus)	6	2	4	3	1	1	1	2	4
Bullock's Oriole (Icterus bullockii)	1	1					2	2	
House Finch (Haemorhous mexicanus)	14	12	12	16	13	10	12	4	8
Lesser Goldfinch (Spinus psaltria)	4	5	6	2	4	8	3	6	4
American Goldfinch (Spinus tristis)	5				1				
House Sparrow (Passer domesticus)*	5	4	10	8	12	4	5	10	5
Nutmeg Mannikin (Lonchura punctulata)**			1				1	1	1

Introduced non-native species with established breeding population in California Exotic or escaped non-native species that may or many not be breeding in California

REACH 71, 79, AND 80 SANTA CLARA RIVER MAIN CHANNEL (PD 1946) SOUTH FORK – SANTA CLARA RIVER (VALENCIA BLVD. BRIDGE STABILIZER) SOUTH FORK – SANTA CLARA RIVER (PD's 1947 & 1946)

	Survey Dates – 2013								
Species	11-Apr	21-Apr	3-May	12-May	23-May	2-Jun	16-Jun	30-Jun	13-Jul
Canada Goose (Branta canadensis)		1	4						
Mallard (Anas platyrhynchos)			1						
California Quail (Callipepla californica)	8	12	6	3	5		6	5	2
Red-tailed Hawk (Buteo jamaicensis)				1	1	1			
Killdeer (Charadrius vociferous)		2	1	2		1			
Western Gull (Larus occidentalis)		1							
Mourning Dove (<i>Zenaida macroura</i>)	4	15	10	2	6	6	19	6	15
Anna's Hummingbird (<i>Calypte anna</i>)	2	2	2	2	4	6	4	4	4
Costa's Hummingbird (Calypte costae)						1			1
Allen's/Rufous Hummingbird (Selasphorus sp.)	1	1							2
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)	4	2	3	3	2	1	1	3	1
Downy Woodpecker (<i>Picoides pubescens</i>)				1			1		1
Black Phoebe (Sayornis nigricans)					1		2	1	3
Say's Phoebe (Sayornis saya)	2		2	2	3		1	1	1
Ash-throated Flycatcher (<i>Myiarchus cinerascens</i>)	1	4	2	3	3	2		2	3
Cassin's Kingbird (<i>Tyrannus vociferans</i>)	2	2	3	4	5	6	6	4	3
Western Kingbird (<i>Tyrannus verticalis</i>)	2	1	1	2		2	1	1	
Loggerhead Shrike (<i>Lanius ludovicianus</i>)		1							
Bell's Vireo (Vireo bellii)	1								
Warbling Vireo (<i>Vireo gilvus</i>)					1				
Western Scrub-Jay (Aphelocoma insularis)	5	3	4	6	5	8	9	5	4
American Crow (Corvus brachyrhynchos)			2	1		2	35	10	4
Common Raven (Corvus corax)	10	12	16	8	6	3	4	10	3
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	2	3	2	3	2	4	2		2

REACH 71, 79, AND 80 SANTA CLARA RIVER MAIN CHANNEL (PD 1946) SOUTH FORK – SANTA CLARA RIVER (VALENCIA BLVD. BRIDGE STABILIZER) SOUTH FORK – SANTA CLARA RIVER (PD's 1947 & 1946)

	Survey Dates – 2013								
Species	11-Apr	21-Apr	3-May	12-May	23-May	2-Jun	16-Jun	30-Jun	13-Jul
Cliff Swallow (Petrochelidon pyrrhonota)				3	25	12	10	10	
Barn Swallow (<i>Hirundo rustica</i>)	1	1			1				
Oak Titmouse (Baeolophus inornatus)		1	2				2		3
Bushtit (<i>Psaltriparus minimus</i>)	8	8	8	25	18		10	18	12
Bewick's Wren (<i>Thryomanes bewickii</i>)	8	13	9	11	13	7	6	6	3
Wrentit (<i>Chamaea fasciata</i>)	1								
Western Bluebird (<i>Sialia mexicana</i>)				2				2	
American Robin (<i>Turdus migratorius</i>)	1							1	
Northern Mockingbird (<i>Mimus polyglottos</i>)		3		4	1	3	1	4	2
California Thrasher (Toxostoma redivivum)	4	6		1	2	2	2		2
European Starling (<i>Sturnus vulgaris</i>)*	2	5	10	7	8		3		
American Pipit (Anthus rubescens)		1							
Cedar Waxwing (Bombycilla cedrorum)			5	3	2				
Phainopepla (<i>Phainopepla nitens</i>)				1			1		
Orange-crowned Warbler (Oreothlypis celata)	4	1							
MacGillivray's Warbler (Geothlypis tolmiei)		1							
Common Yellowthroat (Geothlypis trichas)		1							
Yellow Warbler (<i>Setophaga petechia</i>)	2	1	2	2	3	2	1	2	
Yellow-rumped Warbler (Setophaga coronata)	14	6	2						
Black-throated Gray Warbler (Setophaga nigrescens)	1								
Wilson's Warbler (<i>Wilsonia pusilla</i>)	1	2	4		1				
Spotted Towhee (Pipilo maculates)	1	3	3	2	1	2	2	2	
California Towhee (<i>Melozone crissalis</i>)	6	8	7	7	9	6	4	4	1
Song Sparrow (<i>Melospiza lincolnii</i>)	4		1	2	3	1		1	

REACH 71, 79, AND 80 SANTA CLARA RIVER MAIN CHANNEL (PD 1946) SOUTH FORK – SANTA CLARA RIVER (VALENCIA BLVD. BRIDGE STABILIZER) SOUTH FORK – SANTA CLARA RIVER (PD's 1947 & 1946)

				Surve	y Dates -	- 2013			
Species	11-Apr	21-Apr	3-May	12-May	23-May	2-Jun	16-Jun	30-Jun	13-Jul
Lincoln's sparrow (<i>Melospiza lincolnii</i>)	2								
White-crowned Sparrow (Zonotrichia leucophrys)	12	5							
Western Tanager (<i>Piranga ludoviciana</i>)			2		4	1			
Black-headed Grosbeak (Pheucticus melanocephalus)	1	4	2	2	2	1			
Blue Grosbeak (Passerina caerulea)								1	
Brewer's Blackbird (Euphagus cyanocephalus)	1	1		3	5	3		10	
Great-tailed Grackle (Quiscalus mexicanus)								2	
Brown-headed Cowbird (Molothrus ater)		1							
Hooded Oriole (Icterus cucullatus)					1		1		
Bullock's Oriole (Icterus bullockii)	3		1	1		2	1		
House Finch (Haemorhous mexicanus)	23	18	16	24	26	16	28	18	12
Lesser Goldfinch (Spinus psaltria)	5	3	2	4	3	2	3	5	2
Lawrence's Goldfinch (Spinus lawrencei)			1				1		
House Sparrow (Passer domesticus)*							2		
* Introduced non-native species with	established	d breeding _l	population	in California	э				

REACH 75 SOUTH FORK – SCR (PD's725, 916, 1041 ,& 1300)

				Surve	ey Dates -	· 2013			
Species	11-Apr	21-Apr	3-May	12-May	23-May	2-Jun	16-Jun	30-Jun	13-Jul
Mallard (Anas platyrhynchos)	2								
California Quail (Callipepla californica)	3	2	6	5	10	6	3		
Double-crested cormorant (Phalacrocorax auritus)	1								
Cooper's Hawk (<i>Accipiter cooperii</i>)	1		1				1		
Red-shouldered Hawk (Buteo lineatus)			1				1		1
Rock Pigeon (<i>Columba livia</i>)*	40			2				1	
Mourning Dove (Zenaida macroura)	3	3	4	4	3	6	12		8
Greater Roadrunner (Geococcyx californianus)	1								
White-throated Swift (Aeronautes saxatalis)	4	10	10	4	5	8	4	5	
Black-chinned Hummingbird (Archilochus alexandri)	1	1				3	1	1	1
Anna's Hummingbird (<i>Calypte anna</i>)	3	3	2	3	4	6	5	5	7
Allen's/Rufous Hummingbird (Selasphorus sp.)	1	1	1	1	1	1	2	3	2
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)	1	2	2	1	2	3	1		1
Downy Woodpecker (Picoides pubescens)	2						1		
American Kestrel (<i>Falco sparverius</i>)	1	1					1		
Western Wood-Pewee (Contopus sordidulus)					1				
Black Phoebe (Sayornis nigricans)	6	2	3	3	4	8	4	4	7
Say's Phoebe (Sayornis saya)	1			2					
Ash-throated Flycatcher (Myiarchus cinerascens)						1			
Cassin's Kingbird (<i>Tyrannus vociferans</i>)	6	5	6	3	5	5	7	4	3
Western Kingbird (<i>Tyrannus verticalis</i>)	2	1			1	1			
Warbling Vireo (<i>Vireo gilvu</i> s)		2	4			1			
Western Scrub-Jay (Aphelocoma insularis)	6	3	4	2	4	6	5	8	6
American Crow (Corvus brachyrhynchos)	2	1			1	4	2	1	

REACH 75 SOUTH FORK – SCR (PD's725, 916, 1041 ,& 1300)

				Surve	ey Dates -	- 2013			
Species	11-Apr	21-Apr	3-May	12-May	23-May	2-Jun	16-Jun	30-Jun	13-Jul
Common Raven (Corvus corax)	12	4	3	4	4	10	3	3	5
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	10	2	8	3	2	3	4	2	1
Barn Swallow (<i>Hirundo rustica</i>)		2							
Oak Titmouse (Baeolophus inornatus)			3		1	4	6	2	
Bushtit (<i>Psaltriparus minimus</i>)	12	12	10	20	14	22	12	24	15
Bewick's Wren (<i>Thryomanes bewickii</i>)	7	11	9	11	8	11	6	5	2
Wrentit (Chamaea fasciata)	2	1	1		1	1	1	1	
Western Bluebird (Sialia mexicana)	1		3	1	1	2	1	3	
California Thrasher (Toxostoma redivivum)	6	6	4	2	4	2	2	6	1
Northern Mockingbird (<i>Mimus polyglottos</i>)	3	4	3	5	5	7	5	6	4
American Pipit (Anthus rubescens)	1								
Orange-crowned Warbler (Oreothlypis celata)		3							
Cedar Waxwing (<i>Bombycilla cedrorum</i>)			3						
Nashville Warbler (Oreothlypis ruficapilla)		2							
Common Yellowthroat (Geothlypis trichas)						1			
Yellow Warbler (Setophaga petechia)			1		2		1		
Yellow-rumped Warbler (Setophaga coronata)	13	13	1						
Wilson's Warbler (<i>Wilsonia pusilla</i>)		2	2		1				
Black-throated Gray Warbler (Setophaga nigrescens)	1	2							
Spotted Towhee (Pipilo maculates)			3	2			2	2	
California Towhee (<i>Melozone crissalis</i>)	8	8	7	6	7	6	5	6	3
Lark Sparrow (Chondestes grammacus)								1	
Song Sparrow (<i>Melospiza lincolnii</i>)	2	3	5	3	3	5	2	3	4
White-crowned Sparrow (Zonotrichia leucophrys)	8	1							

REACH 75 SOUTH FORK – SCR (PD's725, 916, 1041 ,& 1300)

				Surve	y Dates -	- 2013			
Species	11-Apr	21-Apr	3-May	12-May	23-May	2-Jun	16-Jun	30-Jun	13-Jul
Western Tanager (<i>Piranga ludoviciana</i>)		1	9	6	6				
Black-headed Grosbeak (<i>Pheucticus melanocephalus</i>)		4	1	1	1	4	2	1	
Blue Grosbeak (<i>Passerina caerulea</i>)						1	1	1	1
Lazuli Bunting (<i>Passerina amoena</i>)			1						
Brown-headed Cowbird (Molothrus ater)	1				1				
Hooded Oriole (Icterus cucullatus)	2	2	2	2		1		1	3
Bullock's Oriole (Icterus bullockii)	3	6	5	2	4	6	6	2	2
House Finch (Haemorhous mexicanus)	14	18	18	25	28	22	60	16	20
Pine Siskin (Carduelis pinus)		3							
Lesser Goldfinch (Spinus psaltria)	5		5	4	3	6	8	1	2
American Goldfinch (Spinus tristis)	50	20	2						
House Sparrow (Passer domesticus)*	5	4	8	6	6	6	5	3	5
* Introduced non-native species with	established	l breeding p	oopulation i	n California	1				

REACHES 82 AND 109 SANTA CLARA RIVER MAIN CHANNEL (PD 2278) AND SANTA CLARA RIVER – SOUTH BANK WEST OF MCBRAN PKWY (MTD 1510)

				Surve	ey Dates -	2013			
Species	10-Apr	23-Apr	3-May	13-May	24-May	11-Jun	18-Jun	26-Jun	9-Jul
Mallard (Anas platyrhynchos)					2		1		
California Quail (Callipepla californica)	13			14	5	2	20	5	
Great Blue Heron (<i>Ardea herodias</i>)						1			
Cooper's Hawk (Accipiter cooperii)			1			1	1		
Red-shouldered Hawk (Buteo lineatus)	2		1		2	2	1	2	2
Rock Pigeon (Columba livia)*									
Mourning Dove (Zenaida macroura)	2		4	6		3	7	1	
Greater Roadrunner (Geococcyx californianus)									1
Black-chinned Hummingbird (Archilochus alexandri)						1			
Anna's Hummingbird (Calypte anna)	3	2	6	8	1	1	3	3	3
Allen's/Rufous Hummingbird (Selasphorus sp.)							1		2
Nuttall's Woodpecker (<i>Picoides nuttallii</i>)	6		4	4	6	5	5	8	5
Downy Woodpecker (Picoides pubescens)					1		1	2	3
Hairy Woodpecker (<i>Picoides villosus</i>)					1		2	1	
Northern Flicker (Colaptes auratus)		1							
Western Wood-Pewee (Contopus sordidulus)			4		1				
Willow Flycatcher (Empidonax traillii)							2		
Black Phoebe (Sayornis nigricans)	2	2	2	3	4	4	3	5	2
Say's Phoebe (Sayornis saya)					1		1	1	
Ash-throated Flycatcher (Myiarchus cinerascens)	1	2	3	5	5	6	8	7	7
Cassin's Vireo (Vireo cassinii)	1								
Warbling Vireo (Vireo gilvus)				1	2				
Western Scrub-Jay (Aphelocoma insularis)	4		2	6	9	9	6	4	2

REACHES 82 AND 109 SANTA CLARA RIVER MAIN CHANNEL (PD 2278) AND SANTA CLARA RIVER – SOUTH BANK WEST OF MCBRAN PKWY (MTD 1510)

				Surve	ey Dates -	2013			
Species	10-Apr	23-Apr	3-May	13-May	24-May	11-Jun	18-Jun	26-Jun	9-Jul
American Crow (Corvus brachyrhynchos)					4	7	3	8	5
Common Raven (Corvus corax)	4	2	5	5	11	8	8	8	5
Northern Rough-winged Swallow (Stelgidopteryx serripennis)				2	2	8	4	2	
Cliff Swallow (Petrochelidon pyrrhonota)					2	4	5	6	
Barn Swallow (Hirundo rustica)			4						
Oak Titmouse (Baeolophus inornatus)				2	3	3	3	7	1
Bushtit (<i>Psaltriparus minimus</i>)	10	6	15	26	15		8		10
White-breasted Nuthatch (Sitta carolinensis)									1
House Wren (<i>Troglodyt</i> es aedon)	3				3			2	1
Bewick's Wren (<i>Thryomanes bewickii</i>)	3		10	6	8	7	10	15	9
Wrentit (<i>Chamaea fasciata</i>)							4	2	
Swainson's Thrush (Catharus ustulatus)					1				
American Robin (<i>Turdus migratorius</i>)			1		1	1	3		1
California Thrasher (Toxostoma redivivum)					4	2	10	4	7
Northern Mockingbird (Mimus polyglottos)		1	2	2	5	1	3	1	
European Starling (Sturnus vulgaris)*							2	1	
Phainopepla (Phainopepla nitens)				2	1		1		1
Orange-crowned Warbler (Oreothlypis celata)			1						
Common Yellowthroat (Geothlypis trichas)			2		7	6	10		4
Yellow Warbler (Setophaga petechia)	1		1	2	16	6	6	6	1
Yellow-rumped Warbler (Setophaga coronata)	15								
Wilson's Warbler (<i>Wilsonia pusilla</i>)			2	2	1				
Spotted Towhee (Pipilo maculates)	3	2	6	4	13	10	19	13	8
California Towhee (Melozone crissalis)	4	2	4	5	4	6	1	1	1

REACHES 82 AND 109 SANTA CLARA RIVER MAIN CHANNEL (PD 2278) **AND** SANTA CLARA RIVER - SOUTH BANK WEST OF MCBRAN PKWY (MTD 1510)

				Surve	ey Dates -	2013			
Species	10-Apr	23-Apr	3-May	13-May	24-May	11-Jun	18-Jun	26-Jun	9-Jul
Song Sparrow (Melospiza lincolnii)		1	10	8	25	6	6	4	7
White-crowned Sparrow (Zonotrichia leucophrys)	5								
Western Tanager (<i>Piranga ludoviciana</i>)				1	1				
Black-headed Grosbeak (Pheucticus melanocephalus)	1		2	2	10	13	6	8	6
Blue Grosbeak (<i>Passerina caerulea</i>)							1		
Hooded Oriole (Icterus cucullatus)						1			
Bullock's Oriole (Icterus bullockii)	2		4				2		
House Finch (Haemorhous mexicanus)	6		8	15	12	22	32	30	65
Lesser Goldfinch (Spinus psaltria)	4	6	10	14	6	7	3	5	8
American Goldfinch (Spinus tristis)							1		
Nutmeg Mannikin (Lonchura punctulata)**								1	

Introduced non-native species with established breeding population in California Exotic or escaped non-native species that may or many not be breeding in California

REACHES 87 AND 97 CASTAIC – OLD ROAD DRAIN (CDR 525.012D) OUTLET AND CASTAIC CREEK – THE OLD ROAD 2

				Survey Da	tes – 201	3		
Species	16-Apr	29-Apr	9-May	22-May	7-Jun	18-Jun	2-Jul	12-Jul
Canada Goose (Branta canadensis)		2						
California Quail (Callipepla californica)	6	6	5			1	2	
Cooper's Hawk (Accipiter cooperii)					1			
Red-shouldered Hawk (Buteo lineatus)	1	1	1					
Killdeer (Charadrius vociferous)			2					
Mourning Dove (Zenaida macroura)		2	4		2	2	3	3
Anna's Hummingbird (Calypte anna)	2	4	4	2	4	3	2	3
Allen's/Rufous Hummingbird (Selasphorus sp.)				1			2	
Acorn Woodpecker (Melanerpes formicivorus)			1					
Nuttall's Woodpecker (Picoides nuttallii)			2	1	3	2		3
Western Wood-Pewee (Contopus sordidulus)			2					
Black Phoebe (Sayornis nigricans)				1	1		2	
Ash-throated Flycatcher (Myiarchus cinerascens)		1	3	1	1	4		
Warbling Vireo (<i>Vireo gilvus</i>)				1				
Western Scrub-Jay (<i>Aphelocoma insularis</i>)		2	2	4	4	7	7	2
American Crow (Corvus brachyrhynchos)				3	8	8	2	
Common Raven (Corvus corax)	2	2	4	4		2	1	1
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	2	5	2	4	10	1		
Cliff Swallow (Petrochelidon pyrrhonota)	5			7				
Barn Swallow (Hirundo rustica)		2						
Oak Titmouse (Baeolophus inornatus)		1	1					
Bushtit (<i>Psaltriparus minimus</i>)	8	10	10					
Bewick's Wren (<i>Thryomanes bewickii</i>)		2	4	4		2	1	3
California Thrasher (Toxostoma redivivum)				2				

REACHES 87 AND 97 CASTAIC – OLD ROAD DRAIN (CDR 525.012D) OUTLET AND CASTAIC CREEK – THE OLD ROAD 2

			5	Survey Da	tes – 201	3		
Species	16-Apr	29-Apr	9-May	22-May	7-Jun	18-Jun	2-Jul	12-Jul
Northern Mockingbird (Mimus polyglottos)			1					
Common Yellowthroat (Geothlypis trichas)	1				1	3	3	1
Yellow Warbler (<i>Dendroica petechia</i>)				2				
Yellow-rumped Warbler (Setophaga coronata)	3		1					
Spotted Towhee (Pipilo maculates)	2		2		3	1		2
California Towhee (<i>Melozone crissalis</i>)		2	6		4	2	1	
Song Sparrow (<i>Melospiza lincolnii</i>)	3	1		2	1	2	1	
White-crowned Sparrow (Zonotrichia leucophrys)	2							
Western Tanager (<i>Piranga ludoviciana</i>)			2					
Black-headed Grosbeak (Pheucticus melanocephalus)		1	1	2	1	1		
Red-winged Blackbird (Ageaius phoeniceus)		2						
House Finch (Haemorhous mexicanus)		4	10	2	12		7	13
Lesser Goldfinch (Spinus psaltria)			5	6	1		2	2
American Goldfinch (Spinus tristis)			5					
House Sparrow (Passer domesticus)*				1				
* Introduced non-native species with	established	breeding p	opulation i	n California				

REACH 103 BOUQUET CANYON CHANNEL (PD 2225)

			(Survey Da	tes - 201	3		
Species	11-Apr	24-Apr	7-May	30-May	13-Jun	20-Jun	27-Jun	10-Jul
Mallard (Anas platyrhynchos)		2			2	2	2	
California Quail (Callipepla californica)		8	10					
Red-tailed Hawk (Buteo jamaicensis)		2						
Red-shouldered Hawk (Buteo lineatus)	1							
Cooper's Hawk (Accipiter cooperii)					1		1	
Rock Pigeon (Columba livia)*					1			
Mourning Dove (Zenaida macroura)			2	2	3		2	1
White-throated Swift (Aeronautes saxatalis)		3						
Anna's Hummingbird (Calypte anna)	4	4	2	1	3	2	3	2
Costa's Hummingbird (Calypte costae)						2		
Allen's Hummingbird (Selasphorus sasin)	2	2	2	1				
Allen's/Rufous Hummingbird (Selasphorus sp.)				3	1	1	2	1
Nuttall's Woodpecker (Picoides nuttallii)		2	1	1	1	1		1
Black Phoebe (Sayornis nigricans)		1	2	1	1	1	3	
Say's Phoebe (Sayornis saya)					1			
Ash-throated Flycatcher (Myiarchus cinerascens)	1	1	2		1			
Cassin's Kingbird (<i>Tyrannus vociferans</i>)							1	
Warbling Vireo (Vireo gilvus)			1					
Killdeer (Charadrius vociferous)					1			
American Robin (Turdus migratorius)			1					
Western Scrub-Jay (Aphelocoma insularis)		1			1			2
American Crow (Corvus brachyrhynchos)				2		4	3	3
Common Raven (Corvus corax)	5	2	2	8	4	2	8	6
Violet-green Swallow (Tachycineta thalassina)								1
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	2	2	4	2	2		2	5

REACH 103 BOUQUET CANYON CHANNEL (PD 2225)

			5	Survey Da	tes - 201	3		
Species	11-Apr	24-Apr	7-May	30-May	13-Jun	20-Jun	27-Jun	10-Jul
Cliff Swallow (Petrochelidon pyrrhonota)	4				2	3	2	
Barn Swallow (Hirundo rustica)								1
Oak Titmouse (Baeolophus inornatus)								2
Bushtit (<i>Psaltriparus minimus</i>)		15	10	15	2			
Bewick's Wren (Thryomanes bewickii)		6	6	1	2	1	1	5
Common Yellowthroat (Geothlypis trichas)	2			2	4	3	3	3
Yellow Warbler (<i>Dendroica petechia</i>)				1	2		1	
Yellow-rumped Warbler (Setophaga coronata)	5							
Wilson's Warbler (<i>Wilsonia pusilla</i>)			3					
Spotted Towhee (Pipilo maculates)	3	2	6	3	1	1		2
California Towhee (<i>Melozone crissalis</i>)		2	6	1	1	1	2	1
Song Sparrow (<i>Melospiza lincolnii</i>)	10	10	6	8	10	8	9	5
White-crowned Sparrow (Zonotrichia leucophrys)	3							
Black-headed Grosbeak (Pheucticus melanocephalus)	1		3	3	2	1	1	
Blue Grosbeak (<i>Passerina caerulea</i>)						1		1
Brewer's Blackbird (Euphagus cyanocephalus)					1			
Bullock's Oriole (Icterus bullockii)	2							
House Finch (Haemorhous mexicanus)	10	10	5	6	11	8	15	13
Lesser Goldfinch (Spinus psaltria)	12	10	6	1	2		3	1
Lawrence's Goldfinch (Spinus lawrencei)		2						
House Sparrow (Passer domesticus)*	2		2			1		
* Introduced non-native species with	established	d breeding	oopulation	in California	1			

REACH 104 CASTAIC CREEK (PD 2441 UNITS 1 AND 2)

	Survey Dates – 2013											
Species	16-Apr	29-Apr	9-May	22-May	7-Jun	18-Jun	2-Jun	12-Jul				
California Quail (Callipepla californica)			3	3			8					
Cooper's Hawk (Accipiter cooperii)			1									
Greater Roadrunner (Geococcyx californianus)					1							
Mourning Dove (Zenaida macroura)				1		3		3				
Anna's Hummingbird (Calypte anna)			2	7	4	2	2	3				
Allen's Hummingbird (Selasphorus sasin)			1									
Nuttall's Woodpecker (Picoides nuttallii)			1	3	2	2	2	6				
Black Phoebe (Sayornis nigricans)		1						2				
Ash-throated Flycatcher (Myiarchus cinerascens)		1	1	3	2	3	4	6				
Western Kingbird (Tyrannus verticalis)				2	2							
Western Scrub-Jay (Aphelocoma insularis)				6	3	1	7	4				
American Crow (Corvus brachyrhynchos)				1	1		3					
Common Raven (Corvus corax)	2	1	2	3				2				
Northern Rough-winged Swallow (Stelgidopteryx serripennis)				3	1	4						
Cliff Swallow (Petrochelidon pyrrhonota)						1						
Oak Titmouse (Baeolophus inornatus)				1	1	2		2				
Bushtit (Psaltriparus minimus)	5			8	1		9					
House Wren (Troglodytes aedon)			2	1	1							
Bewick's Wren (<i>Thryomanes bewickii</i>)		2		7	6	3	6	4				
Western Bluebird (Sialia mexicana)												
American Robin (Turdus migratorius)		1										
Wrentit (Chamaea fasciata)								1				
California Thrasher (Toxostoma redivivum)			1	2	1							
European Starling (Sturnus vulgaris)*			5									
Common Yellowthroat (Geothlypis trichas)					3							

REACH 104 CASTAIC CREEK (PD 2441 UNITS 1 AND 2)

			9	Survey Da	tes - 201	3		
Species	16-Apr	29-Apr	9-May	22-May	7-Jun	18-Jun	2-Jun	12-Jul
Wilson's Warbler (Wilsonia pusilla)			2					
Spotted Towhee (Pipilo maculates)	1		4	8	6	3	3	2
California Towhee (Melozone crissalis)	1			2	1	1		
Song Sparrow (<i>Melospiza lincolnii</i>)			2	1				
Black-headed Grosbeak (Pheucticus melanocephalus)		1		1	1		1	2
Blue Grosbeak (Passerina caerulea)				1				
Brown-headed Cowbird (Molothrus ater)					1			
Bullock's Oriole (Icterus bullockii)					1			
House Finch (Haemorhous mexicanus)		2	8	1	7	2	3	9
Lesser Goldfinch (Spinus psaltria)	4	2	6	3			2	
* Introduced non-native species with	established	breeding p	opulation in	n California				

REACH 105 SAN FRANCISQUITO CANYON CHANNEL (PD 2456)

			5	Survey Da	tes - 201	3		
Species	10-Apr	23-Apr	3-May	24-May	11-Jun	18-Jun	26-Jun	9-Jul
California Quail (Callipepla californica)	5	2	6		2	2	3	3
Turkey Vulture (Cathartes aura)			2					
Red-tailed Hawk (Buteo jamaicensis)				1				
Red-shouldered Hawk (Buteo lineatus)					1		1	
Cooper's Hawk (Accipiter cooperii)	1							
Killdeer (Charadrius vociferous)				1				
Mourning Dove (Zenaida macroura)	2		4	3	4	5	2	
Greater Roadrunner (Geococcyx californianus)					1			
Black-chinned Hummingbird (Archilochus alexandri)							1	
Anna's Hummingbird (Calypte anna)	2	2	2	1		2	3	4
Costa's Hummingbird (Calypte costae)							1	
Allen's/Rufous Hummingbird (Selasphorus sp.)				2		1	1	3
Nuttall's Woodpecker (Picoides nuttallii)	1				1	1	1	1
Downy Woodpecker (Picoides pubescens)							1	
American Kestrel (Falco sparverius)				1				
Willow Flycatcher (Empidonax traillii)						2	1	
Black Phoebe (Sayornis nigricans)	1	2	2	1		1	1	1
Say's Phoebe (Sayornis saya)		1						
Ash-throated Flycatcher (Myiarchus cinerascens)				1				2
Cassin's Kingbird (Tyrannus vociferans)							1	
Western Scrub-Jay (Aphelocoma insularis)	1	1	2	2		2	1	3
American Crow (Corvus brachyrhynchos)	2			2		2	1	1
Common Raven (Corvus corax)	1	1	2	1	2	1		2
Northern Rough-winged Swallow (Stelgidopteryx serripennis)	2			2	6	4		
Cliff Swallow (Petrochelidon pyrrhonota)	4	3	3	2		5	2	2

REACH 105 SAN FRANCISQUITO CANYON CHANNEL (PD 2456)

			(Survey Da	ites – 201	3		
Species	10-Apr	23-Apr	3-May	24-May	11-Jun	18-Jun	26-Jun	9-Jul
Oak Titmouse (Baeolophus inornatus)						1		
Bushtit (<i>Psaltriparus minimus</i>)	6	2	5				10	
Bewick's Wren (<i>Thryomanes bewickii</i>)				3	2		2	3
Wrentit (Chamaea fasciata)	1		1					
Western Bluebird (Sialia mexicana)	2							
California Thrasher (Toxostoma redivivum)			2	1		1	2	5
Northern Mockingbird (Mimus polyglottos)				1				
Phainopepla (Phainopepla nitens)				1				
European Starling (Sturnus vulgaris)*						2		
Common Yellowthroat (Geothlypis trichas)					3	1	1	2
Yellow Warbler (Setophaga petechia)					1			
Yellow-rumped Warbler (Setophaga coronata)	10							
Wilson's Warbler (Wilsonia pusilla)			1					
Spotted Towhee (Pipilo maculates)					2			1
California Towhee (Melozone crissalis)	2		2	2	2		2	2
Song Sparrow (Melospiza lincolnii)		1					2	1
White-crowned Sparrow (Zonotrichia leucophrys)	3							
Black-headed Grosbeak (Pheucticus melanocephalus)							1	
Blue Grosbeak (Passerina caerulea)							1	2
Red-winged Blackbird (Ageaius phoeniceus)						1		
House Finch (Haemorhous mexicanus)	5	5		11	7	10	1	13
Lesser Goldfinch (Spinus psaltria)	4	4	8	1	2	3	4	2

REACH 106 CASTAIC DRAIN OUTLET (RMD CHANNELS)

			(Survey Da	tes – 201	3		
Species	16-Apr	29-Apr	9-May	22-May	7-Jun	18-Jun	2-Jul	12-Jul
Mallard (Anas platyrhynchos)	2	2						
California Quail (Callipepla californica)							1	
Killdeer (Charadrius vociferous)		2		1				
Rock Pigeon (Columba livia)*				15			1	
Eurasian Collared-Dove (Streptopelia decaocto)*		2		1				
Mourning Dove (Zenaida macroura)	1	1						
Anna's Hummingbird (Calypte anna)		2	1	2	3		1	
Western Wood-Pewee (Contopus sordidulus)				2				
Black Phoebe (Sayornis nigricans)		3	3	5	2	1	1	
Western Kingbird (Tyrannus verticalis)					2	6	4	4
Warbling Vireo (<i>Vireo gilvus</i>)				1				
Western Scrub-Jay (Aphelocoma insularis)		4			1	2		
American Crow (Corvus brachyrhynchos)			1		2			
Common Raven (Corvus corax)	2	2				1	1	
Northern Rough-winged Swallow (Stelgidopteryx serripennis)			1				1	2
Cliff Swallow (Petrochelidon pyrrhonota)		4						
Barn Swallow (Hirundo rustica)			3	1	2	1		
House Wren (Troglodytes aedon)			1					
American Robin (Turdus migratorius)								1
California Thrasher (Toxostoma redivivum)			1					
Northern Mockingbird (<i>Mimus polyglottos</i>)								1
European Starling (Sturnus vulgaris)*				4				
Common Yellowthroat (Geothlypis trichas)			1		1	1	1	
Yellow Warbler (Setophaga petechia)		1		1				
Wilson's Warbler (<i>Wilsonia pusilla</i>)		1						

REACH 106 CASTAIC DRAIN OUTLET (RMD CHANNELS)

				Survey Da	tes - 201	3		
Species	16-Apr	29-Apr	9-May	22-May	7-Jun	18-Jun	2-Jul	12-Jul
California Towhee (Melozone crissalis)				4				
Song Sparrow (Melospiza lincolnii)	2	2	4	4	3	1		
Black-headed Grosbeak (Pheucticus melanocephalus)			1			1		
Blue Grosbeak (Passerina caerulea)								1
Red-winged Blackbird (Ageaius phoeniceus)	4	10		10			1	
Brewer's Blackbird (Euphagus cyanocephalus)							1	
Great-tailed Grackle (Quiscalus mexicanus)				4				
Bullock's Oriole (Icterus bullockii)				2				
House Finch (Haemorhous mexicanus)	4	7	4	10	2	3	3	6
Lesser Goldfinch (Spinus psaltria)	5		2		1			
* Introduced non-native species with	established	l breeding p	opulation i	n California				

REACH 110 HASLEY CANYON CHANNEL (PD 2262)

				Surve	y Dates -	- 2013			
Species	11-Apr	24-Apr	7-May	17-May	30-May	13-Jun	20-Jun	27-Jun	10-Jul
California Quail (Callipepla californica)		14	2	2			2	1	5
Great Egret (<i>Ardea alba</i>)									1
Red-tailed Hawk (Buteo jamaicensis)		1							
Killdeer (Charadrius vociferous)		2				1		4	
Western Gull (Larus occidentalis)									1
Rock Pigeon (Columba livia)*									25
Mourning Dove (Zenaida macroura)			1	5		1	3		
Barn Owl (<i>Tyto alba</i>)						1			
Anna's Hummingbird (Calypte anna)	1	3	1		2			4	2
Costa's Hummingbird (Calypte costae)						1	1		
Allen's Hummingbird (Selasphorus sasin)				3				2	
Allen's/Rufous Hummingbird (Selasphorus sp.)					1	1	1		
Nuttall's Woodpecker (Picoides nuttallii)								1	
Western Wood-Pewee (Contopus sordidulus)					2				
Black Phoebe (Sayornis nigricans)					1	1			1
Say's Phoebe (Sayornis saya)		1				1		1	1
Ash-throated Flycatcher (Myiarchus cinerascens)							1		
Cassin's Kingbird (Tyrannus vociferans)								2	2
Western Scrub-Jay (Aphelocoma insularis)		2			3		1		1
American Crow (Corvus brachyrhynchos)			1	2	2		1	2	4
Common Raven (Corvus corax)	1	4	1	4	4	6	4	2	3
Northern Rough-winged Swallow (Stelgidopteryx serripennis)			4	4			2	2	
Cliff Swallow (Petrochelidon pyrrhonota)					2		10	1	
Bushtit (Psaltriparus minimus)	1	15			12		15		6
White-breasted Nuthatch (Sitta carolinensis)					1				

REACH 110 HASLEY CANYON CHANNEL (PD 2262)

				Surve	y Dates -	- 2013		Survey Dates – 2013							
Species	11-Apr	24-Apr	7-May	17-May	30-May	13-Jun	20-Jun	27-Jun	10-Jul						
Bewick's Wren (<i>Thryomanes bewickii</i>)		6	1	4	5	3	4	1	2						
Western Bluebird (Sialia mexicana)								1							
American Robin (Turdus migratorius)								2							
Wrentit (Chamaea fasciata)					1	2	1	3	1						
California Thrasher (Toxostoma redivivum)					1	1	1	3	1						
Northern Mockingbird (Mimus polyglottos)					1		1	3	2						
Common Yellowthroat (Geothlypis trichas)						1									
Yellow Warbler (Setophaga petechia)					2										
Yellow-rumped Warbler (Setophaga coronata)	1	5													
Wilson's Warbler (Wilsonia pusilla)				1											
Townsend's Warbler (Setophaga townsendi)			1												
Spotted Towhee (Pipilo maculates)		6	1	3	8	3	2	1	3						
Rufous-crowned Sparrow (Aimophila ruficeps)						1									
California Towhee (Melozone crissalis)		6	1	6	6	4	4	5	4						
Lark Sparrow (Chondestes grammacus)								1	3						
Song Sparrow (Melospiza lincolnii)	1	4	1	3	4	2	1								
Western Tanager (<i>Piranga ludoviciana</i>)					6										
Black-headed Grosbeak (Pheucticus melanocephalus)		2				3	4	2	1						
Blue Grosbeak (Passerina caerulea)					1	1	1	4	2						
Hooded Oriole (Icterus cucullatus)									1						
Bullock's Oriole (Icterus bullockii)	1							1							
House Finch (Haemorhous mexicanus)	1	15	1		10	14	13	15	15						
Lesser Goldfinch (Spinus psaltria)			1	6	1	2		3	4						
* Introduced non-native species with	established	d breeding	population	in California	1										

APPENDIX C

WILDLIFE COMPENDIA (ARROYO TOAD SURVEYS)

TABLE 2 WILDLIFE COMPENDIA (ARROYO TOAD SURVEYS)

		Stat	tus			
Scientific Name	Common Name	USFWS	CDFG	Channel Reach		
Fish						
CYPRINIDAE – MINNOW	/S					
Gila orcutti	arroyo chub	-	SSC	Reaches 79, 109		
Rhinichthys osailolus	Santa Ana speckled dace	-	SSC	Reaches 79, 109		
Catostomus santaanae ²	Santa Ana sucker	-	-	Reaches 79, 109		
GASTEROSTERIDAE - S	STICKLEBACKS					
Gasterosteus aculeatus	unarmored threespine stickleback	E	E, FP	Reach 109		
Amphibians			•			
BUFONIDAE – TRUE TO	ADS					
Anaxyrus boreas	western toad	-	-	All Reaches		
HYLIDAE – TREEFROGS	3					
Pseudacris hypochondriaca	Baja California treefrog	-	-	Reaches 71, 79, 80, 82, 87, 105, 109		
RANIDAE – TRUE FROG	SS					
Lithobates catesbeiana*	American bullfrog	-	-	Reach 109		
PIPIDAE – TONGUELESS FROGS						
Xenopus laevis*	African clawed frog	-	-	Reaches 79, 82, 87, 105, 109		
Federal Designations FE Listed by the federal government as an Endangered species Listed by the LLS Forget Songice as "Sonsitive"						

Listed by the U.S. Forest Service as "Sensitive"

 State Designations

 SE
 Listed by the state government as an Endangered species

 SSC
 Species of Special Concern

 FP
 Fully Protected

* Introduced species.

APPENDIX D SURVEYOR CERTIFICATE STATEMENT

APPENDIX D SURVEYOR CERTIFICATION STATEMENT

We certify that the information in this survey report and enclosed exhibits fully and accurately present our work.

Brian Daniels Senior Biologist (TE-821401-4)

R-Z. Da

Amber Oneal Heredia Senior Biologist

James Pike

Amper Oneal Heredia

(TE-148554-2)

James Pike

Consulting Biologist

(TE-832946-4)

APPENDIX E

CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDB) FIELD SURVEY FORMS

Date of Field Work (mm/dd/yyyy): 05/22/2013

For Office Use Only	
Quad Code	
Occ. No	
Map Index No.	
_	Occ. No.

Reset California Native Species Field	Survey Form Send Form					
Scientific Name: Vireo bellii pusillus						
Common Name: least Bell's vireo	-					
Total No. Individuals 7 Subsequent Visit?	Jim Pike 18744 Beach Bld, #E ton Beach, CA, 92648 Idress: jpike44@earthlink.net (714) 968-7977					
Plant Information Animal Information						
Phenology: % yegetative flowering fruiting frui	# larvae # egg masses # unknown Image: Imag					
Location Description (please attach map AND/OR fill out your c	hoice of coordinates, below)					
Multi-strata riparian vegetation bordering the streambed						
Quad Name:	, copulating, perching, roosting, etc., especially for avifauna): was only present on one survey. One pair eventually					
Please fill out separate form for other rare taxa seen at this site.						
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Bordered by industrial and a golf course.	Excellent Good Fair Poor					
Visible disturbances:						
Threats: Invasive vegetation and paintball games						
Comments: Relatively good quality habitat for riparian species, but xeric conditions an issue this season.						
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference):	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes □					

Date of Field Work (mm/dd/yyyy): 06/14/2013

	For Office Use Only
Source Code	Quad Code
Elm Code	Occ. No
EO Index No	Map Index No

Reset California Native Species Field	I Survey Form Send Form						
Scientific Name: Vireo bellii pusillus							
Common Name: least Bell's vireo							
Total No. Individuals26 Subsequent Visit?	Is Jim Pike 18744 Beach Blvd, #E Iton Beach, CA, 92648 Iddress: jpike44@earthlink.net (714) 968-7977						
Plant Information Animal Information							
Phenology:%%	# larvae # egg masses # unknown Image: Imag						
Location Description (please attach map AND/OR fill out your o	choice of coordinates, below)						
Tall black willows and islands of narrow-leaved willow bordering the San Gabriel River							
County: Los Angeles Landowner / Mgr. Quad Name:	: Department of Public Works Elevation:						
T R Sec,¼ of¼, Meridian: H□ M□ S□ Source of Coordinates (GPS, topo. map & type): GPS							
	ke & Model <u>Garmin 60CSx</u> al Accuracy <u>3 meters</u> meters/feet						
90.000.00	c (Latitude & Longitude)						
Habitat Description (plants & animals) plant communities, dominants, associates, s Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling							
Five territorial males throughout the season. Two additional males present only on on narrow-leaved willow (with a fourth nesting effort almost certainly in the same plant four nests that were discovered were successful, producing a minimum of 15 young, the last of the proscribed surveys on July 12, and its outcome is unknown at this time.	ne or two surveys. Three nests found in species), and another nest in mulefat. Three of the An additional very late nest had three white eggs on						
Please fill out separate form for other rare taxa seen at this site.							
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Urban and horse stables	☐ Excellent ☐ Good ☐ Fair ☐ Poor						
Visible disturbances: Homeless encampments							
Threats: Brown-headed cowbirds and fluctuating water levels							
Comments: Narrow-leaved willow islands provide high-quality vireo habitat, but the threat posed by a burgeoning homeless population is enormous.							
Determination: (check one or more, and fill in blanks)	Photographs: (check one or more) Slide Print Digital						
Keyed (cite reference): Compared with specimen housed at:	Plant / animal						
Compared with photo / drawing in: By another person (name):	Diagnostic feature						
Other: Bird expert and professional vireo biologist	May we obtain duplicates at our expense? yes no no						

For Office Use Only		
Source Code	Quad Code	
Elm Code	Occ. No	
EO Index No.	Map Index No	

Date of Field Work (mm/dd/yyyy): 05/23/2013		
Reset California Native Species Field Survey Form Send Form		
Scientific Name: Vireo bellii pusillus		
Common Name: least Bell's vireo		
Total No. Individuals3	Brian E. Daniels 225 South Lake Avenue, Suite 1000 a, CA. 91101 dress: bdaniels@bonterraconsulting.com (626) 351-2000	
Plant Information Animal Information		
Phenology:%	# larvae # egg masses # unknown □ □ □ □ nesting rookery burrow site other	
Location Description (please attach map AND/OR fill out your care	hoice of coordinates, below)	
County: Los Angeles Quad Name: Asuza T R Sec, ¼ of ¼, Meridian: H□ M□ S□ Source of Coordinates (GPS, topo. map & type): GoogleEarth T R Sec, ¼ of ¼, Meridian: H□ M□ S□ GPS Make & Model DATUM: NAD27 □ NAD83 □ WGS84 □ Horizontal Accuracy meters/feet Coordinate System: UTM Zone 10 □ UTM Zone 11 ☑ OR Geographic (Latitude & Longitude) □ Coordinates: 11S 413549, 3778307 and 414080, 3778597		
Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna): Two territorial males and at least 1 female present during the survey season. The color-banded female was nest building with the male on this date, but the outcome of the nesting was not determined. Note that this color-banded female was banded on October 27, 2012, at San Jose del Cabo, Baja California.		
Please fill out separate form for other rare taxa seen at this site.		
Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☐ Fair ☐ Poor Immediate AND surrounding land use: Mix of open space, residential to west, and quarry operations to east and north.		
Visible disturbances: Homeless encampments at willow clumps, one of which burned during the survey season - complete loss of several willows.		
Threats: Nothing imminent (other than the homeless).		
Comments: The side drainage on east side (Beatty Channel - Reach 39) is maintained by the County of LA Department of Pubic Works. Annual clearing of vegetation occurs in compliance with regulatory permits. Homeless activity has been an issue for years.		
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference): ☐ Compared with specimen housed at: ☐ Compared with photo / drawing in: ☐ By another person (name): ☐ Other:	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes □ no □	

	For Office Use Only
Source Code	Quad Code
Elm Code	Occ. No
EO Index No	Map Index No

Date of Field Work (mm/dd/yyyy): 06/21/2013	Map Index No	
Reset California Native Species Field Survey Form Send Form		
Scientific Name: Vireo bellii pusillus		
Common Name: least Bell's vireo		
Total No. Individuals Subsequent Visit?	er: Brian E. Daniels 225 South Lake Avenue, Suite 1000 ena, CA. 91101 Address: bdaniels@bonterraconsulting.com (626) 351-2000	
Phenology:%	# larvae # egg masses # unknown	
Location Description (please attach map <u>AND/OR</u> fill out your choice of coordinates, below)		
County: Los Angeles Quad Name: Torrance Elevation: 15 ft.		
Habitat Description (plants & animals) plant communities, dominants, associates, animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, callin One territorial male was present in the willow riparian habitats of Wilmington Drain during focused least Bell's vireo surveys on the late date of May 29 and remained or Please fill out separate form for other rare taxa seen at this site.	g, copulating, perching, roosting, etc., especially for avifauna):	
Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor Immediate AND surrounding land use: mix of residential and commercial; downstream across PCH is Ken Malloy Regional Park Visible disturbances: The drainage has long history of use by homeless, but these encampments were cleared prior to surveys in March 2011. Threats: Nothing imminent Comments: Wilmington Drain (Reach 27) from the I-110 Fwy to PCH is maintained by the County of LA Department of Pubic Works. Annual clearing of vegetation occurs in compliance with regulatory permits.		
Determination: (check one or more, and fill in blanks) Keyed (cite reference): Compared with specimen housed at: Compared with photo / drawing in: By another person (name): Other:	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes no	

Date of Field Work (mm/dd/yyyy): 06/17/2013

For Office Use Only		
Source Code	Quad Code	_
Elm Code	Occ. No	_
EO Index No.	Map Index No.	_ ,

Reset California Native Species Field	d Survey Form Send Form	
Scientific Name: Vireo bellii pusillus		
Common Name: least Bell's vireo		
Total No. Individuals 5 Subsequent Visit? ✓ yes □ no Is this an existing NDDB occurrence? □ no ✓ unk. Yes, Occ. # Address Pasade: E-mail A	r: Brian E. Daniels : 225 South Lake Avenue, Suite 1000 na, CA. 91101 ddress: bdaniels@bonterraconsulting.com (626) 351-2000	
Plant Information Phenology:	nesting rookery burrow site other	
County: Los Angeles Landowner / Mgr.: Los Angeles County Quad Name: San Fernando T R Sec, ¼ of¼, Meridian: H□ M□ S□ Source of Coordinates (GPS, topo. map & type): GoogleEarth T R Sec, ¼ of¼, Meridian: H□ M□ S□ GPS Make & Model DATUM: NAD27 □ NAD83 □ WGS84 □ Horizontal Accuracy meters/feet Coordinate System: UTM Zone 10 □ UTM Zone 11 □ OR Geographic (Latitude & Longitude) □ Coordinates: 11S 370290, 3797539 and 370436, 3797504 Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):		
Two territorial males with just one paired during survey season. This pair fledged at least two young. Please fill out separate form for other rare taxa seen at this site.		
Immediate AND surrounding land use: mix of open space, residential, and golf course	☐ Excellent ☑ Good ☐ Fair ☐ Poor	
Visible disturbances: Relatively high use levels of wash by humans for various activities; more limited in basin		
Threats: Nothing imminent Comments: High levels of disturbance especially upstream of Maclay Street including illegal dumping, off-road motorcycles, etc. The side drainage on west side of Pacoima Wash is May Channel Outlet (Channel Reach 13) that is maintained by the County of LA Department of Pubic Works. Annual clearing of vegetation occurs in compliance with regulatory permits.		
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference): ☐ Compared with specimen housed at: ☐ Compared with photo / drawing in: ☐ By another person (name): ☐ Other:	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes □ no □	

Date of Field Work (mm/dd/yyyy): 05/23/2013

For Office Use Only		
Source Code	Quad Code	
Elm Code	Occ. No	
EO Index No	Map Index No	

Reset California Native Species Field	d Survey Form Send Form	
Scientific Name: Icteria virens		
Common Name: Yellow-breasted Chat	,	
Total No. Individuals 2 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address Pasader E-mail A	Brian E. Daniels 225 South Lake Avenue, Suite 1000 na, CA. 91101 ddress: bdaniels@bonterraconsulting.com (626) 351-2000	
Plant Information Animal Information		
Phenology: wegetative flowering fruiting fruiti	# larvae # egg masses # unknown nesting rookery burrow site other	
Location Description (please attach map AND/OR fill out your	choice of coordinates, below)	
County: Los Angeles Landowner / Mgr.: Los Angeles County/ Army Corps of Engineers Quad Name: Asuza Elevation: 609 ft. T R Sec,¼ of¼, Meridian: H□ M□ S□ Source of Coordinates (GPS, topo. map & type): GoogleEarth T R Sec,¼ of¼, Meridian: H□ M□ S□ GPS Make & Model DATUM: NAD27 □ NAD83 □ WGS84 □ Horizontal Accuracy meters/feet Coordinate System: UTM Zone 10 □ UTM Zone 11 ☑ OR Geographic (Latitude & Longitude) □ Coordinates: 11S 414066 3778621		
Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna): Two territorial males during these surveys. Survey area extends from pedestrian bridge (opposite Encanto Park) upstream to second drop		
structure. Habitat is southern willow scrub with mule fat being dominant in most are	eas.	
Please fill out separate form for other rare taxa seen at this site. Site Information Overall site/occurrence quality/viability (site + population):	☐ Excellent ☐ Good ☐ Fair ☐ Poor	
Immediate AND surrounding land use: Mix of open space, residential to west, and quarry		
Visible disturbances: Homeless encampments at willow clumps, one of which burned during the survey season - complete loss of several willows.		
Threats: Nothing imminent (other than the homeless).		
Comments: The side drainage on east side (Beatty Channel - Reach 39) is maintained by the County of LA Department of Pubic Works. Annual clearing of vegetation occurs in compliance with regulatory permits. Homeless activity has been an issue here for years.		
Determination: (check one or more, and fill in blanks) Keyed (cite reference): Compared with execution bound at:	Photographs: (check one or more) Slide Print Digital Plant / animal	
Compared with specimen housed at: Compared with photo / drawing in:	Plant / animal	
By another person (name): Other:	May we obtain duplicates at our expense? yes ☐ no ☐	

Date of Field Work (mm/dd/yyyy): 06/14/2013

For Of	ffice Use Only
Source Code	Quad Code
Elm Code	Occ. No
EO Index No.	Map Index No

Reset California Native Species Field	d Survey Form Send Form	
Scientific Name: Icteria virens	-	
Common Name: Yellow-breasted Chat		
Total No. Individuals 3 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address Hunting E-mail A	r: Jim Pike : 18744 Beach Blvd, #E gton Beach, CA, 92648 ddress: jpike44@earthlink.net (714) 968-7977	
Plant Information Animal Information		
Phenology:%%	# larvae # egg masses # unknown nesting rookery burrow site other	
Location Description (please attach map AND/OR fill out your	choice of coordinates, below)	
Multi-strata riparian vegetation bordering the streambed		
County: Los Angeles Landowner / Mgr	.: Department of Public Works	
Quad Name:	Elevation:	
	of Coordinates (GPS, topo. map & type): GPS	
	ake & Model Garmin 60CSx	
	tal Accuracy 3 meters meters/feet ic (Latitude & Longitude)	
Coordinates: 118 0402134 3764453	ic (Latitude & Longitude)	
Habitat Description (plants & animals) plant communities, dominants, associates, animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, callin		
Territorial singing throughout the series of surveys that were conducted	g, copulating, perching, roosting, etc., especially for avitauria):	
reintorial shighing throughout the series of surveys that were conducted		
Please fill out separate form for other rare taxa seen at this site.		
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Bordered by industrial and a golf course	□ Excellent □ Good □ Fair □ Poor	
Visible disturbances:		
Threats: Invasive vegetation and paintball games		
Comments: Relatively good quality habitat for riparian species		
Commonto. Actual of good quartey machae for reputation operior		
		
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference):	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □	
☐ Compared with specimen housed at:	Habitat 🔲 🔲	
Compared with photo / drawing in: By another person (name):	Diagnostic feature	
Other: Bird expert and professional vireo biologist	May we obtain duplicates at our expense? yes ☐ no ☐	

Date of Field Work (mm/dd/yyyy): 06/01/2013

For Office Use Only		
Source Code _	Quad Code	
Elm Code	Occ. No	
EO Index No	Map Index No	

Reset California Native Species Field	Send Form	
Scientific Name: Icteria virens		
Common Name: Yellow-breasted Chat		
Total No. Individuals2 Subsequent Visit?	: Jim Pike 18744 Beach Blvd, #E ton Beach, CA, 92648 ddress: jpike44@earthlink.net (714) 968-7977	
Plant Information Animal Information		
Phenology:%	# larvae # egg masses # unknown Image: Imag	
Location Description (please attach map AND/OR fill out your o	choice of coordinates, below)	
Islands of narrow-leaved willow bordering the streambed		
County: Los Angeles Quad Name: T R Sec,¼ of¼, Meridian: H□ M□ S□		
Coordinates: 11S 0405681 3767137 Habitat Description (plants & animals) plant communities, dominants, associates, s Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling Territorial singing throughout the series of surveys that were conducted		
Please fill out separate form for other rare taxa seen at this site.		
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Bordered by urban and stables	☐ Excellent ☐ Good ☐ Fair ☐ Poor	
Visible disturbances: Homeless encampments		
Threats: Lack of water flow in the river		
Comments:		
Determination: (check one or more, and fill in blanks)	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes no □	

Date of Field Work (mm/dd/yyyy): 06/10/2013

For Office Use Only	
Source Code	Quad Code
Elm Code	Occ. No
EO Index No.	Map Index No.

Reset California Native Species Field	d Survey Form Send Form	
Scientific Name: Setophaga petechia		
Common Name: Yellow Warbler		
Total No. Individuals 2 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address Pasade E-mail A	r: Brian E. Daniels 225 South Lake Avenue, Suite 1000 na, CA. 91101 address: bdaniels@bonterraconsulting.com (626) 351-2000	
Plant Information Animal Information		
Phenology:%% fruiting	# larvae # egg masses # unknown nesting rookery burrow site other	
Location Description (please attach map <u>AND/OR</u> fill out your	choice of coordinates, below)	
County: Los Angeles Quad Name: Asuza T R Sec, ¼ of ¼, Meridian: H□ M□ S□		
Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna): One breeding pair during focused surveys for least Bell's vireo. Survey area extends from pedestrian bridge (opposite Encanto Park) upstream to second drop structure. Habitat is southern willow scrub with mule fat being dominant in most areas. The yellow warbler territory was at willow clump over a pond at side outlet at western base of the pedestrian bridge. Please fill out separate form for other rare taxa seen at this site.		
, , , , , , , , , , , , , , , , , , , ,	□ Excellent ☑ Good □ Fair □ Poor	
Immediate AND surrounding land use: Mix of open space, residential to west, and quarry operations to east and north. Visible disturbances: Homeless encampments at willow clumps, one of which burned during the survey season - complete loss of several willows. Threats: Nothing imminent (other than the homeless). Comments: The side drainage on east side (Beatty Channel - Reach 39) is maintained by the County of LA Department of Pubic Works. Annual clearing of vegetation occurs in compliance with regulatory permits. Homeless activity has been an issue for years.		
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference): ☐ Compared with specimen housed at: ☐ Compared with photo / drawing in: ☐ By another person (name): ☐ Other:	Photographs: (check one or more) Slide Print Digital Plant / animal	

Date of Field Work (mm/dd/yyyy): 06/11/2013

For Office Use Only
Quad Code
Occ. No
Map Index No

Reset California Native Species Field	d Survey Form Send Form	
Scientific Name: Setophaga petechia		
Common Name: Yellow Warbler		
Total No. Individuals 6 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address: Pasader E-mail Address:	E: Brian E. Daniels E: 225 South Lake Avenue, Suite 1000 Ena, CA. 91101 ddress: bdaniels@bonterraconsulting.com (626) 351-2000	
vegetative flowering fruiting	# larvae # egg masses # unknown	
Location Description (please attach map AND/OR fill out your choice of coordinates, below)		
County: Los Angeles Quad Name: Newhall T R Sec, ¼ of ¼, Meridian: H□ M□ S□		
Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna): At least 6 territorial males in Santa Clara River west (downstream) of McBean Pkwy bridge present during focused surveys for least Bell's vireo. Survey area is the confluence of San Francisquito Wash and Santa Clara River. Habitats include young southern willow scrub to old growth riparian forest dominated by stands of cottonwoods. Surface water present throughout surveys. Please fill out separate form for other rare taxa seen at this site.		
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Mix of commercial, residential, and light industrial Visible disturbances: none Threats: none Comments: These surveys are for flood control facilities managed by the County of LA Department to toe of concrete levee at confluence with San Francisquito Wash and are opinion for unarmored threespine stickleback and arroyo toad.	artment of Pubic Works. Maintenance activities are	
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference): ☐ Compared with specimen housed at: ☐ Compared with photo / drawing in: ☐ By another person (name): ☐ Other:	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes no	

Date of Field Work	(mm/dd/saaa):	06/14/2013
Date of Field Work	(mm/aa/yyyy):	00/14/2013

For Office Use Only		
Source Code	Quad Code	
Elm Code	Occ. No	
EO Index No.	Map Index No	

Date of Field Work (mm/dd/yyyy): 06/14/2013	Map Index No	
Reset California Native Species Field	Send Form	
Scientific Name: Setophaga petechia		
Common Name: Yellow Warbler		
Total No. Individuals 9 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address: Hunting E-mail Address:	Jim Pike 18744 Beach Blvd, #E ton Beach, CA, 92648 Idress: jpike44@earthlink.net (714) 968-7977	
Phenology:%	# larvae # egg masses # unknown I	
Location Description (please attach map <u>AND/OR</u> fill out your c	hoice of coordinates, below)	
Tall black willows bordering the streambed	,	
County: Los Angeles Quad Name: T R Sec,¼ of¼, Meridian: H□ M□ S□ Source of Coordinates (GPS, topo. map & type): GPS T R Sec,¼ of¼, Meridian: H□ M□ S□ GPS Make & Model Garmin 60CSx DATUM: NAD27 □ NAD83 ☑ WGS84 □ Horizontal Accuracy 3 meters Coordinate System: UTM Zone 10 □ UTM Zone 11 ☑ OR Geographic (Latitude & Longitude) □ Coordinates: 11S 0402314 3764521		
Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna): Territorial singing throughout the series of surveys that were conducted Please fill out separate form for other rare taxa seen at this site.		
Site Information Overall site/occurrence quality/viability (site + population):	Excellent Good Fair Poor	
Immediate AND surrounding land use: Bordered by industrial and urban		
Visible disturbances:		
Threats: Lack of water flow in the river		
Comments:		
Determination: (check one or more, and fill in blanks)	Photographs: (check one or more) Slide Print Digital	
☐ Keyed (cite reference): ☐ Compared with specimen housed at:	Photographs: (check one or more) Slide Print Digital Plant / animal	
☐ Keyed (cite reference):	Plant / animal	

For Office Use Only			
Source Code _		Quad Code	
Elm Code		Occ. No	
EO Index No		Map Index No.	

Date of Field Work (mm/dd/yyyy): 06/28/2013	
Reset California Native Species Field	d Survey Form Send Form
Scientific Name: Setophaga petechia	
Common Name: Yellow Warbler	
Total No. Individuals 17 Subsequent Visit? ☑ yes ☐ no Is this an existing NDDB occurrence? ☐ no ☑ unk. Yes No If not, why? Address Hunting E-mail A	r: Jim Pike : 18744 Beach Blvd, #E gton Beach, CA, 92648 ddress: jpike44@earthlink.net (714) 968-7977
Plant Information Phenology:%	# larvae # egg masses # unknown I
Location Description (please attach map AND/OR fill out your	choice of coordinates, below)
Multi-strata riparian vegetation bordering the streambed	•
Quad Name:	Elevation: Coordinates (GPS, topo. map & type): Code Garmin 60CSx Code tall Accuracy 3 meters Code (Latitude & Longitude)
Habitat Description (plants & animals) plant communities, dominants, associates, a Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling Territorial singing throughout the series of surveys that were conducted Please fill out separate form for other rare taxa seen at this site.	
	☐ Excellent ☑ Good ☐ Fair ☐ Poor
Immediate AND surrounding land use: Bordered by industrial and a golf course Visible disturbances:	
Threats: Invasive vegetation and paintball games	
Comments: Relatively good quality habitat for riparian species	
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference):	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes no

Mail to: California Natural Diversity Database Department of Fish and Game 1807 13th Street, Suite 202 Sacramento, CA 95811 Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

06/14/2013

	For Office Use Only
Source Code _	Quad Code
Elm Code	Occ. No
EO Index No	Map Index No

Date of Field Work (mm/dd/yyyy): 06/14/2013			
Reset California Native Species Field	d Survey Form Send Form		
Scientific Name: Setophaga petechia			
Common Name: Yellow Warbler			
Total No. Individuals 12 Subsequent Visit? ☑ yes ☐ no Is this an existing NDDB occurrence? ☐ no ☑ unk. Yes No If not, why? Address Hunting E-mail A	: Jim Pike : 18744 Beach Blvd, #E gton Beach, CA, 92648 ddress: jpike44@earthlink.net (714) 968-7977		
Plant Information Animal Information			
Phenology:%%% fruiting 12	# larvae # egg masses # unknown I		
Location Description (please attach map AND/OR fill out your	choice of coordinates, below)		
Tall black willows and islands of narrow-leaved willow bordering the San Gabriel River	,		
	: Department of Public Works		
Quad Name:	Elevation:of Coordinates (GPS, topo. map & type): GPS		
	ske & Model Garmin 60CSx		
	al Accuracy 3 meters meters/feet		
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ OR Geographi	c (Latitude & Longitude)		
Coordinates: 11S 0405470 3767041			
Habitat Description (plants & animals) plant communities, dominants, associates, s Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling Territorial singing throughout the survey season			
Diagon fill out congrete form for other rare tays soon at this site			
Please fill out separate form for other rare taxa seen at this site.			
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Urban and horse stables	□ Excellent □ Good ☑ Fair □ Poor		
Visible disturbances: Homeless encampments			
Threats: Brown-headed cowbirds and lack of water flow in the river			
Comments:			
Data was in a tion would be a second as a			
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference):	Photographs: (check one or more)		
Compared with specimen housed at: Compared with photo / drawing in:	Habitat		
By another person (name):			
Other: Bird expert and professional vireo biologist	May we obtain duplicates at our expense? yes no		

Mail to: California Natural Diversity Database Department of Fish and Game 1807 13th Street, Suite 202 Sacramento, CA 95811 Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/yyyy): 06/21/2013

For Office Use Only							
Source Code _		Quad Code					
Elm Code		Occ. No					
EO Index No		Map Index No.					

Reset California Native Species Field	d Survey Form Send Form							
Scientific Name: Setophaga petechia								
Common Name: Yellow Warbler								
Total No. Individuals 7 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address Pasader E-mail A	: Brian E. Daniels : 225 South Lake Avenue, Suite 1000 na, CA. 91101 ddress: bdaniels@bonterraconsulting.com (626) 351-2000							
Plant Information Animal Information								
Phenology: wegetative flowering fruiting fruiti	# larvae # egg masses # unknown nesting rookery burrow site other							
Location Description (please attach map AND/OR fill out your	choice of coordinates, below)							
• ,	.: Los Angeles County							
Quad Name: <u>Torrance</u> T R Sec,¼ of¼, Meridian: H□ M□ S□ Source	Elevation: 22 ft. of Coordinates (GPS, topo. map & type): GoogleEarth							
	ake & Model							
	tal Accuracy meters/feet							
Habitat Description (plants & animals) plant communities, dominants, associates, a Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling								
Three breeding pairs present during least Bell's vireo surveys of willow riparian hab Highway upstream to I-110 Freeway. One begging fledgling observed in one territor	itats of Wilmington Drain from Pacific Coast							
Please fill out separate form for other rare taxa seen at this site.								
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Mix of residential and commercial (small amount	☐ Excellent ☐ Good ☐ Fair ☐ Poor of industrial - oil property); Regional Park south of PCH.							
Visible disturbances: Proposition O activities began during the course of these surveys that	involved removal of exotic plant species.							
Threats: Removal of exotic plants followed by plantings of native should benefit this species								
Comments: Wilmington Drain (Reach 27) from the I-110 Fwy to PCH is maintained by the clearing of vegetation occurs in compliance with regulatory permits.	County of LA Department of Public Works. Annual							
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference):	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes no							

Mail to: California Natural Diversity Database Department of Fish and Game 1807 13th Street, Suite 202 Sacramento, CA 95811 Fax: (916) 324-0475 email: CNDDB@dfg.ca.gov

Date of Field Work (mm/dd/www): 06/17/2013

For Office Use Only							
Quad Code							
Occ. No							
Map Index No							

Date of Field Work (mm/dd/yyyy): 00/17/2013							
Reset California Native Species Field	Send Form						
Scientific Name: Setophaga petechia							
Common Name: Yellow Warbler							
Total No. Individuals 4 Subsequent Visit? yes no Is this an existing NDDB occurrence? no Yes, Occ. # Address: Pasaden E-mail Ad E-mail Ad	r: Brian E. Daniels : 225 South Lake Avenue, Suite 1000 na, CA. 91101 ddress: bdaniels@bonterraconsulting.com (626) 351-2000						
Plant Information Animal Information							
Phenology: % 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	# larvae # egg masses # unknown						
Location Description (please attach map AND/OR fill out your of	choice of coordinates, below)						
County: Los Angeles Quad Name: Sunland T R Sec,¼ of¼, Meridian: H□ M□ S□ Source of Coordinates (GPS, topo. map & type): GoogleEarth T R Sec,¼ of¼, Meridian: H□ M□ S□ GPS Make & Model DATUM: NAD27 □ NAD83 □ WGS84 □ Horizontal Accuracy meters/feet Coordinate System: UTM Zone 10 □ UTM Zone 11 ☑ OR Geographic (Latitude & Longitude) □ Coordinates: 11S 378348 3792716							
Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope: Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna): Two breeding pairs present during least Bell's vireo surveys of riparian habitat at mouth of Haines Channel Outlet in Tujunga Wash. Both pairs nested successfully as one fledgling was observed. The survey area is about 200 feet from outlet of concrete channel and is dominated by tall trees including willows, cottonwoods, eucalyptus and several other ornamental trees.							
Please fill out separate form for other rare taxa seen at this site.							
Site Information Overall site/occurrence quality/viability (site + population): Immediate AND surrounding land use: Residential, alluvial sage scrub habitats of Tujunga Visible disturbances: human traffic Threats: nothing imminent Comments: this is Channel Reach 12 that is maintained by the County of LA Department of I							
compliance with regulatory permits.	The state of the s						
Determination: (check one or more, and fill in blanks) ☐ Keyed (cite reference): ☐ Compared with specimen housed at: ☐ Compared with photo / drawing in: ☐ By another person (name): ☐ Other:	Photographs: (check one or more) Slide Print Digital Plant / animal □ □ □ Habitat □ □ □ Diagnostic feature □ □ □ May we obtain duplicates at our expense? yes □ no □						

APPENDIX F WILLOW FLYCATCHER SURVEY AND DETECTION FORMS

	V	Villow I	Elycatch	er (WIFL	.) Surve	ey and Detection Form (rev	ised Apri	l, 20 10))	
Site Name:	LA County D	Department	of Public Wo	rks Soft-Bottor	n Channels	State: CA	County:	Los Ange	eles	
USGS Quad	Name:	Sunland					Elevation:	353	(meters	s) .
Creek, River,	or Lake N	ame:	Haines Can	yon Main Cha	nnel Outlet	(Reach 12)			,	,
Is copy of	of USGS m	ap mark	ed with su	rvey area a	nd WIFL	sightings attached (as required)?	Yes	X	No	
Survey Coord	linates:	Start:	E 3784	32	N	3792715 UTM	Datum:	WGS84	(See inst	ructions)
,		Stop:	E 3782	33	N	3792737 UTM	Zone:		`	,
If s	survev cooi					ordinates for each survey in comm			of this page.	
						information on back of this			F8	
Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs breeding;-potential threats [livestock, cowbirds, Diorhabda spp.]). If Diorhabda found, contact USFWS and State WIFL coordinator.	or GPS Coordii (this is an op pairs, or grow	tional colun ps of birds	nn for documenting	•
Survey # 1	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	05/23/13	0	U	Ü	IN.		0			
B. Daniels	Start:									
	0545									
120	Stop: 0645						7			
	Total hrs:									
	1.0									
Survey # 2	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	06/10/13	0	0	0	N		0			011111
B. Daniels	Start:		E (10 Z.)					-		
	0600							- 1 10		12 (1)
	Stop:	The state of							The state of the s	
	0650						1			
	Total hrs: 0.8		74.75				1			
Survey # 3	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	06/17/13	0	0	0	N		0	Sex	OTME	UTWIN
B. Daniels	Start:									
	0545									
	Stop:									
	0635									
	Total hrs:									
Survey # 4	Date:					·	# Dirdo	Cov	LITME	LITMAN
Observer(s):	06/25/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
B. Daniels	Start:									
	0550									
	Stop:									
	0640									
	Total hrs: 0.8									
Survey # 5	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	07/5/13						0			
B. Daniels	Start: 0600									
								-		
	Stop: 0645									
	Total hrs:			147						
	4.2									
Overall Site Su	mmary									
Totals do not equal the		Total Adult		Total						

 Reporting Individual:
 Brian E. Daniels
 Date Report Completed:
 2013

 US Fish & Wildlife Service Permit #:
 TE821401-4
 State Wildlife Agency Permit #:
 SC-4535

Were any WIFLs color-banded?

Yes

If yes, report color combination(s) in the comments

section on back of form and report to USFWS.

No

Total Nests

0

Territories

0

Total Pairs

0

Residents

0

column. Include only resident adults.

individuals.

Total survey hrs:

Do not include migrants, nestlings, and fledglings. Be careful not to double count

4.2

Reporting Ind	lividual	Brian E. Daniels					Phone #	626-351-2000
Affiliation	BonTerra C	Consulting					E-mail	bdaniels@bonterraconsulting.com
Site Name		Department of Public Works		nels		Date report Co	mpleted	2013
		n a previous year? Yesx		ıknown				
Did you verify	that this site	name is consistent with the	at u sed in previous	s yrs?	Yes X	No		Not Applicable
If name is diffe	erent, what n	ame(s) was used in the past	?					
If site was surve	eyed last ye	ar, did you survey the same	general area this	year?	Yes X	No		If no, summarize below.
Did you survey	the same go	eneral area during each visit	to this site this ye	ear?	Yes X	No		If no, summarize below.
Management A	uthority for	Survey Area:	Federal	_Municipal/Cour	ıty X	State		Tribal Private
Name of Manag	gement Enti	ty or Owner (e.g., Tonto Na	tional Forest)	LA County De	partment o	of Public Works (FI	ood Mainte	enance Division)
Length of area	surveyed:	0.2		(kı	n)			
Vegetation Cha	aracteristics:	Check (only one) category	that best describe	es the predomir	nant tree/s	hrub foliar layer a	at this site	:
Х	Native	broadleaf plants (entirely or	r almost entirely,	> 90% native)				
	Mixed	native and exotic plants (me	ostly native, 50 - 9	90% native)				
	Mixed	native and exotic plants (me	ostly exotic, 50 - 9	90% exotic)				
	Exotic/	introduced plants (entirely	or almost entirely,	, > 90% exotic)				
Identify the 2-3 Salix sp., Popu		nt tree/shrub species in orde ii	r of dominance. U	Jse scientific na	ame.	-		
Average height	of canopy (Do not include a range):	6 m				(meters)	
Attach the follo	owing: 1) co	ppy of USGS quad/topograp	hical map (REQU	JIRED) of surv	ey area, o	utlining survey si	te and loca	ation of WIFL detections;
2) sketch or aer	rial photo sh	owing site location, patch s	hape, survey route	e, location of an	ny detecte	d WIFLs or their	nests;	
3) photos of the	e interior of	the patch, exterior of the pa	tch, and overall si	ite. Describe ar	ıy unique	habitat features is	n Commer	nts.
Comments (suc Attach addition		d end coordinates of survey necessary.	area if changed a	among surveys,	suppleme	ental visits to sites	s, unique h	abitat features.
•		s channel reach consist		ip of willow w	oodland/	l upstream of th	ne Mulho	lland Highway and more

scrubby willows with mule fat scrub downstream of the bridge.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

					,	•	,		,	,	
Site Name:	LA County D	Department	of Public Wo	rks Soft-Bottor	n Channels	State: CA		County:	Los Ange	eles	
USGS Quad	Name:	Sunland						Elevation:	400	(meters	s)
Creek, River,	or Lake N	ame:	May Chann	el Outlet into P	acoima Car	nyon (Reach 14)				000	
Is copy	of USGS m	ap mark	ed with su	rvey area a	nd WIFL	sightings attached ((as required)?	Yes	X	No	
Survey Coord		Start:				3797657	UTM	Datum:	WGS84	(See inst	ructions)
		Stop:			•	3797496	UTM	Zone:		`	
If	survey coor				enter co	ordinates for each su				of this page.	
**	builtey cool	· amatos c				information on b			011 0401	or mis page.	
				T	Nest(s)	I The state of the	uen of titis p	T			
Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Found? Y or N If Yes, number of nests	Comments (e.g., bird behavi breeding;-potential threats [li Diorhabda spp.]). If Diorha USFWS and State WIFL coo	vestock, cowbirds, bda found, contact	(this is an opt pairs, or grou	ional colun ps of birds	n for documenting	
Survey # 1	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s):	05/23/13	U	0	0	IN			0			
B. Daniels	Start: 0700										
	Stop: 0820										
	Total hrs:										
Survey # 2	Date:				N		8 1 1 1 1 1 1	# Birds	Sex	UTM E	UTM N
Observer(s):	06/10/13	0	0	0	N			0			
B. Daniels	Start:			No.							
	0705										
	Stop:										
	0845										
	Total hrs: 0.7										
Survey # 3	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s):	06/17/13							0			
B. Daniels	Start: 0650										
											-
	Stop: 0800										
	Total hrs:										
	1.2					10 310					
Survey # 4	Date:	0	0	0				# Birds	Sex	UTM E	UTM N
Observer(s):	06/25/13	0	0	0	N			0			
B. Daniels	Start:										
	0655										
	Stop:								11111		
	0820	in the second									
	Total hrs:										
								# Dis-I-	Carr	LUCACE	TITLEST
Survey # 5	Date: 07/5/13	0	0	0	N			# Birds	Sex	UTM E	UTM N
bserver(s): B. Daniels	Start:	-171						0			
D. Daniolo	0700										
	Stop: 0830										
	Total hrs:										
	1.5										
Overall Site Su	10.50			you 10 m							
otals do not equal the olumn. Include only to not include migran edglings.	resident adults.	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any W	VIFLs color-banded	? Yes		No	
e careful not to doub adividuals.		0	0	0	0		yes, report color co section on back of	2.2			-
Total survey hi	rs: 6.1					l	section on back of	iorni anu rep	011 10 031	110.	

Reporting Individual: Brian E. Daniels Date Report Completed: 2013
US Fish & Wildlife Service Permit #: TE821401-4 State Wildlife Agency Permit #: SC-4535

Reporting Individual Brian E. Daniels	Phone #	626-351-2000
Affiliation BonTerra Consulting	E-mail	bdaniels@bonterraconsulting.com
Site Name LA County Department of Public Works Soft-Bottom Channels Date report C	ompleted	2013
Was this site surveyed in a previous year? Yes × No Unknown Unknown		
Did you verify that this site name is consistent with that $\frac{1}{2}$ and $\frac{1}{2}$ by $\frac{1}{2}$ No		Not Applicable
If name is different, what name(s) was used in the past?		
If site was surveyed last year, did you survey the same general area this year? Yes X No		If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes X No		If no, summarize below.
Management Authority for Survey Area: Federal Municipal/County X State		Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) LA County Department of Public Works (F	lood Mainte	enance Division)
Length of area surveyed: 0.2 (km)		
Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer	at this site	:
Native broadleaf plants (entirely or almost entirely, > 90% native)		
X Mixed native and exotic plants (mostly native, 50 - 90% native)		
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)		
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)		
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Salix sp., Baccharis salicifolia		
Average height of canopy (Do not include a range): 5 m	(meters)	
Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey s	ite and loc	ation of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their	nests;	
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features	in Comme	nts.
Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to site Attach additional sheets if necessary.	s, unique l	nabitat features.

The survey area for this channel reach includes a strip of disturbed willow scrub on the west bank of Pacoima Wash. In the vicinity of this side drainage, Pacoima Wash supports only alluvial sage scrub habitats. Two unnamed side outlets opposite this channel reach support willow riparian and are also included in the survey area for this channel reach.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

		v mow i	Tycatch	er (WIFL	a) Surve	ey and Detection Form (revi	sea Apri	i, 2010)	
Site Name:	LA County D	Department	of Public Wo	rks Soft-Bottor	n Channels	State: CA	_ County:		eles	
USGS Quad	Name:	Torrance					Elevation:	8	(meters	s)
Creek, River,	or Lake N	ame:	Wilmington	Drain (Reach	27)	X.				
Is copy of	of USGS m	ap mark	ed with su	rvey area a	nd WIFL	sightings attached (as required)?	Yes	X	No	
Survey Coord	linates:	Start:	E 3808	00	N	3739755 UTM	Datum:	WGS84	(See inst	ructions)
		Stop:	E 3806	67	N	3740748 UTM	Zone:	11		
If s	survey coor	dinates c	hanged be	tween visits	, enter co	ordinates for each survey in comme	ents section	on back	of this page.	
						information on back of this p			1 0	
	T	Γ	Γ	T	Nest(s)	<u> </u>				
C#		Number of	F-tt1	Dating at a	Found?	Comments (e.g., bird behavior; evidence of pairs	or GPS Coordin	ates for WI	FL Detections	
Survey # Observer(s)	Date (m/d/y)	Adult	Estimated Number of	Estimated Number of	Y or N	breeding;-potential threats [livestock, cowbirds,	10.		n for documenting	individuals,
(Full Name)	Survey Time	WIFLs	Pairs	Territories '	If Yes, number of	Diorhabda spp.]). If Diorhabda found, contact USFWS and State WIFL coordinator.	pairs, or grou		found on ditional sheets if ne	ecessary
					nests		,			,
Survey # 1	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	05/29/13	U	U	U	IN		0			
B. Daniels	Start:									
	0915									
	Stop:									
	1100									
	Total hrs:									
Survey # 2	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	06/12/13	0	0	0	N		0	Sex	UIME	UTMIN
B. Daniels	Start:									
2. 240.0	0820									
	Stop:							11.11.1		
	1000									
	Total hrs:							1		
	1.7									
Survey # 3	Date: 06/21/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	Start:						0		•	
B. Daniels	0810									
	Stop:						-			
	0930									
	Total hrs:									
	1.3									
Survey # 4	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	06/28/13						0			
B. Daniels	Start: 0830								,	
							-			
	Stop: 1000			1.3						
	Total hrs:	-72 7/4				Birth Mark Control	-			
	1.5									
Survey # 5	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	07/11/13	J	J	J	IV		0	5-13		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
B. Daniels	Start:	. 7								
	0530		,		121					7017
	Stop:									
	0645 Total hrs:							111111111		
	1.25									
Overall Site Su										
Totals do not equal the	sum of each	Total Adult	T-4-1 D '	Total	T-4-131					
column. Include only r Do not include migrant		Residents	Total Pairs	Territories	Total Nests	Were any WIFLs color-bande	d? Yes		No	
ledglings.										.
Be careful not to double ndividuals.	count	0	0	0	0	If yes, report color c	ombination(s)	in the con	nments	
Total survey hr	s: 7.5	0	0	0	0	section on back of	f form and rep	ort to USF	WS.	

Brian E. Daniels 2013 Reporting Individual: Date Report Completed: TE821401-4 SC-4535 State Wildlife Agency Permit #: US Fish & Wildlife Service Permit #:

Reporting Inc	dividual	Brian E. Daniels				Phone #	626-351-2000
Affiliation	BonTerra	Consulting				E-mail	bdaniels@bonterraconsulting.com
Site Name		Department of Public Works		nnels	Da	ate report Completed	2013
	-	in a previous year? Yes		nknown	_		
Did you verify	that this sit	e name is consistent with the	nat used in previou	ıs yrs?	Yes X	No	Not Applicable
If name is diffe	erent, what	name(s) was used in the pas	st?				
If site was surv	veyed last y	ear, did you survey the same	e general area this	year?	Yes X	No	If no, summarize below.
Did you survey	y the same g	general area during each vis	it to this site this y	/ear?	Yes X	No	If no, summarize below.
Management A	Authority fo	r Survey Area:	Federal	Municipal/Co	ounty X	State	Tribal Private
Name of Mana	agement Ent	tity or Owner (e.g., Tonto N	lational Forest)	LA County [Department of Pu	blic Works (Flood Maint	enance Division)
Length of area	surveved.	1.0			(km)		
Vegetation Cha	aracteristics	s: Check (only one) categor	ry that best describ	bes the predon	ninant tree/shrub	o foliar layer at this site	:
Х	Native	e broadleaf plants (entirely	or almost entirely,	> 90% native	:)		
	_ Mixed	l native and exotic plants (n	nostly native, 50 -	90% native)			
	_ Mixed	I native and exotic plants (n	nostly exotic, 50 -	90% exotic)			
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Exotic	c/introduced plants (entirely	or almost entirely	y, > 90% exot	ic)		
Identify the 2-3 Salix sp., Bacc	•	ant tree/shrub species in ord ifolia	ler of dominance.	Use scientific	name.		
Average heigh	t of canopy	(Do not include a range):	10 m			(meters)	
Attach the follo	owing: 1) o	opy of USGS quad/topogra	nphical map (REO	UIRED) of su	rvev area, outlir	ning survey site and loc	eation of WIFL detections:
	-	howing site location, patch	-			-	,
•	*	f the patch, exterior of the p	•	•	-	· ·	nts.
		nd end coordinates of surve					
Attach addition			sy area ii changed	among survey	, в виррісінента	visus to sues, unique	naonai icatures.
			ım Wilmington F	Orain during	these surveys	This activity was t	funded and permitted through
		sition "O" Clean Water F		ziain uuiing	inese surveys	5. THIS GUIVILY WAS	andea and permitted tillough

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Site Name:	LA County E	Department	of Public Wo	rks Soft-Bottor	n Channels	State: CA	County:	Los Ange	eles			
USGS Quad	Name:	Point Dum	е				Elevation:	353	(meters)		
Creek, River,	or Lake N	ame:	Triunfo Cree	ek Channel (Re	each 28)		-					
Is copy of	of USGS m	ap marke	ed with su	rvey area a	nd WIFL	sightings attached (as required)?	Yes	X	No			
Survey Coord	inates:	Start:	E 33596	65	N	3776074 UTM	Datum:		(See instr	uctions)		
		Stop:				3776450 UTM	Zone:					
If s	survey coor	dinates cl				ordinates for each survey in comme		on back	of this page.			
			""Fill i	n aaaiiior	_	information on back of this p	age " "					
Survey # Observer(s)	Date (m/d/y) Survey Time	Number of Adult	Estimated Number of	Estimated Number of	Nest(s) Found? Y or N If Yes,	Comments (e.g., bird behavior; evidence of pairs of breeding; potential threats [livestock, cowbirds, Diorhabda spp.]). If Diorhabda found, contact		(this is an optional column for documenting individuals,				
(Full Name)		WIFLs	Pairs	Territories	number of nests	USFWS and State WIFL coordinator.	-		ditional sheets if ne	cessary.		
Survey # 1	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N		
Observer(s):	05/29/13	U	U	U	IN		0					
B. Daniels	Start:											
	0610 Stop:						_					
	0715											
	Total hrs:											
Survey # 2	1.1 Date:						# Birds	Cov	HTM P	TITNAN		
Observer(s):	06/12/13	0	0	0	N		# Birds	Sex	UTM E	UTM N		
B. Daniels	Start:				-77							
	0545			4				- 1				
	Stop: 0630											
	Total hrs:											
	0.75			- 1								
Survey # 3	Date: 06/21/13	0	0	0	N		# Birds	Sex	UTM E	UTM N		
Observer(s): B. Daniels	Start:						0					
D. Dailleie	0600											
	Stop:											
	0700 Total hrs:											
	1.0			70.00								
Survey # 4	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N		
Observer(s): B. Daniels	06/28/13						0					
b. Daniels	Start: 0600											
	Stop:											
	0700											
	Total hrs: 1.0											
Survey # 5	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N		
Observer(s):	07/11/13	3	9				0					
B. Daniels	Start: 0830	100.00			*							
	Stop:			1								
	0930											
	Total hrs: 1.0	List Li										
Overall Site Su				No.								
Totals do not equal the	sum of each	Total Adult	Total Pairs	Total	Total Nests							
column. Include only re Do not include migrants		Residents	10.0011 0113	Territories	10010	Were any WIFLs color-banded	? Yes		No			
fledglings. Be careful not to double	count					**		. ,.				
individuals. Total survey hra	s: 4.85	0	0	0	0	If yes, report color co section on back of						
Reporting Individ		Brian E.	Daniels			Date Report Comple		2013				

State Wildlife Agency Permit #:

SC-4535

TE821401-4

US Fish & Wildlife Service Permit #:

Reporting Individual Brian E. Daniels		Phone #	626-351-2000
Affiliation BonTerra Consulting		E-mail	bdaniels@bonterraconsulting.com
Site Name LA County Department of Public Works Soft-Bottom Channels	Date report		
Was this site surveyed in a previous year? Yes No Unknown	Yes X	No	Not Applicable
If name is different, what name(s) was used in the past?	i es 🔨	NO	Not Applicable
If site was surveyed last year, did you survey the same general area this year?	Yes X	No	If no, summarize below.
Did you survey the same general area during each visit to this site this year?		No	If no, summarize below.
Management Authority for Survey Area: Federal Municipal/Co	ounty X St.	ite	Tribal Private
	epartment of Public Works		
Length of area surveyed: 0.4	km)		
	•		
Vegetation Characteristics: Check (only one) category that best describes the predom	inant tree/shrub foliar lay	er at this site	:
X Native broadleaf plants (entirely or almost entirely, > 90% native)		
Mixed native and exotic plants (mostly native, 50 - 90% native)			
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)			
Exotic/introduced plants (entirely or almost entirely, > 90% exoti	c)		
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific Salix sp., Baccharis salicifolia	name.		
Average height of canopy (Do not include a range): 6 m		(meters)	
Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of sur	rvey area, outlining surve	site and loc	ation of WIFL detections:
2) sketch or aerial photo showing site location, patch shape, survey route, location of			,
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe	any unique habitat feature	s in Comme	nts.
Comments (such as start and end coordinates of survey area if changed among survey. Attach additional sheets if necessary.	s, supplemental visits to s	ites, unique l	abitat features.
The survey area for this channel reach consists of a dense strip of willow scrubby willows with mule fat scrub downstream of the bridge.	woodland upstream o	f the Mulho	lland Highway and more

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

	Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)											
Site Name:	LA County D	Department	of Public Wo	rks Soft-Botton	n Channels	State: CA		County:	Los Angel	es		
USGS Quad	Name:	Azusa					I	Elevation:	195	(meters)		
Creek, River, or Lake Name: Beatty Channel Outlet into San Gabriel River (Reach 39)												
Is copy	of USGS m	ap marke	ed with su	rvey area ai	nd WIFL	sightings attached (as required)?	Yes	X	No		
Survey Coo	rdinates:	Start:	E 4135	30	N	3778309	UTM	Datum:	WGS84	(See instructions)		
		Stop:	E 4141	68	N	3778620	UTM	Zone:	11			
If	survey coor	dinates cl	nanged be	tween visits,	enter co	ordinates for each sur	rvey in commen	its section	on back	of this page.		
	Fill in additional site information on back of this page											
Survey # Observer(s)	Date (m/d/y)	Number of Adult	Estimated Number of	Estimated Number of	Nest(s) Found? Y or N	Comments (e.g., bird behavio		A STATE OF THE PARTY OF THE PAR		L Detections n for documenting individuals,		

						njormanon on back oj inis pa	O			
Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding;-potential threats [livestock, cowbirds, Diorhabda spp.]). If Diorhabda found, contact USFWS and State WIFL coordinator.	(this is an opt pairs, or grou	PS Coordinates for WIFL Detections his is an optional column for documenting ind airs, or groups of birds found on ach survey). Include additional sheets if necess		
Survey # 1	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	05/23/13	0	0	0	N		0			
B. Daniels	Start:									
	0910									
Type:	Stop:	- 3- JH H							5,517,5	
	1230									5-11-1
	Total hrs:		1 7-54					1,11,14		
	3.3									A III
Survey # 2	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	06/10/13						0			
B. Daniels	Start: 0920									
	Stop: 1130			Tage 16						
	Total hrs:									
	2.2									
Survey # 3	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	06/17/13	0	0	0	N		0	OCA	OTME	OTIVITY
B. Daniels	Start:						0			
D. Barnolo	0840				****					-
	Stop:									
June 1	1100									
	Total hrs:									
	2.3									
Survey # 4	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	06/25/13	10.12.12					0			
B. Daniels	Start:									
	0900									
	Stop: 1045									
	Total hrs:			PER LUM						
	1.75									
Survey # 5	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	07/5/13	0	0	0	N		0		5.111.15	5 2174 11
B. Daniels	Start:									
	0915									
275 / 1	Stop:									
	1100									
	Total hrs:									
	1.75									
Overall Site Su		2000								
Totals do not equal the column. Include only		Total Adult Residents	Total Pairs	Total Territories	Total Nests					
Do not include migran		Residents		Territories		Were any WIFLs color-banded?	Yes		No	
fledglings. Be careful not to doub	le count									-
individuals.		0	0	0	0	If yes, report color con				
Total survey hi	rs: 11.3					section on back of f			r w 5.	
Reporting Indivi		Brian F	D			Date Report Complete		2013		

Reporting Individual: Brian E. Daniels Date Report Completed: 2013 TE821401-4 US Fish & Wildlife Service Permit #: State Wildlife Agency Permit #: SC-4535

Reporting Individual Brian E. Daniels	_ Phone #	626-351-2000
Affiliation BonTerra Consulting	E-mail	bdaniels@bonterraconsulting.com
Site Name LA County Department of Public Works Soft-Bottom Channels Date report 0	_ Completed	2013
Was this site surveyed in a previous year? Yes X No Unknown	-	
Did you verify that this site name is consistent with that used in previous yrs? Yes X N	0	Not Applicable
If name is different, what name(s) was used in the past?		
If site was surveyed last year, did you survey the same general area this year? Yes X N	о	If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes \overline{X} N	0	If no, summarize below.
Management Authority for Survey Area: Federal Municipal/County X Stat	e	Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) LA County Department of Public Works (Flood Mainte	enance Division)
Length of area surveyed: 0.7 (km)		
Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer	r at this site	:
X Native broadleaf plants (entirely or almost entirely, > 90% native)		
Mixed native and exotic plants (mostly native, 50 - 90% native)		
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)		
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)		
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Salix sp., Baccharis salicifolia		
Average height of canopy (Do not include a range): 2 m	(meters)	
Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey	site and loca	ation of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or the	ir nests;	
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features	s in Comme	nts.
Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sit	tes, unique h	abitat features.
Attach additional sheets if necessary.		The second secon

The survey area for this side channel outlet into the San Gabriel River consists primarily of mule fat scrub. There is also some alluvial sage scrub and basically three small patches of willow scrub in the survey area.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)
			·			
		· · · · · · · · · · · · · · · · · · ·				
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Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/southwest/es/arizona/) for the most up-to-date version.

		Willo	w Flycat	cher (WIF	L) Survey a	nd Detection Form (revise	d Apri	1 2010))	
USGS Qu	Reach	es 40 Bald	06/43. Win	2/43b Park	C: Whi	State CA Coun				sters)
Is cop	ver, wetiand	i, or Lake	Name	San	Gaba.	e Kiyer sightings attached (as requ				Vo
Survey Co	ordinates: 5	Start: F (04012	20	N 376	2839		1/A2		
16	1.	Stop: E_(5406	552	N 376	I VX I IITM	~		83(See instru	,
II Surv	vey coordina	ites chang	ged betwe	en visits, e	nter coordina	tes for each survey in comm mation on back of this	nents se	ection	on back of th	is page.
			T		Site injor					
Survey # Observer(s) (Full Name)	Date (m/d/y Survey time		t d	Number of		potential threats [livestock, cowbirds, Diorhabda spp.]). If	(this is individ	an opti uals, pa rvey).	tes for WIFL Det onal column for d airs, or groups of Include additiona	locumenting birds found on
Survey # 1 Observer(s)	Date 5/23	2					# Birds	Sex	UTM E	UTM N
Jim	Start 6:26				m /					
0:V2	Stop O:4	90								
rike	Total hrs									
Survey # 2 Observer(s)	Date 6/1				1		# Birds	Sex	UTM E	UTM N
Tima	Start 6:15			0	h /					
01/0	Stop 10:4	$\phi \bigcirc$			10					<u> </u>
TIKE	Total hrs 4.0	\$								
Survey # 3 Observer(s)	Date 6/14		-				# Birds	Sex	UTM E	UTM N
TDA	Start 5:50	10	0	0	^/					
011	Stop 0:20				10			\dashv		
rike	Total hrs 4	5							****	
Survey # 4	Date 6/28						# Birds	Sex	UTM E	UTM N
Observer(s)	Start 5:45		2		,]					CTMT4
1/ /h.	Stop [0:15	\cup		O			-			
11.	Total hrs 4.							\dashv		
S	,,,									
Observer(s)	Date 7/12		2		_ /	-	# Birds	Sex	UTM E	UTM N
UINI	Start6:10	\mathcal{O}	\cup	\bigcirc		ŀ		\dashv		
n.Val	Stop 0:/(.					
1	Total hrs 4						\dashv	\dashv		
Overall Site Sum Fotals do not equal t		Total	Total	Total	Total		L			
each column. Include esident adults. Do n		Adult Residents	Pairs	Territories	Nests	Ware one Willow Floor		•		∨
nigrants, nestlings, a ledglings.	ind					Were any Willow Flycatch				No
Be careful not to dou	ble count	6		_		If yes, report color combina section on back of form and	ation(s)	in the	comments	
ndividuals.		O	0	0	O	section on back of form and	пероп	10 03	SF W 5.	
otal Survey Hrs										
Reporting Inc US Fish and		vice Per	MPi	KC = 832	a 4 11	Date Report Completed_		1/2	9/13	
o o i ion and	Submit for	m to USF	WS and	State Wild	life Agency l	State Wildlife Agency Per by September Ist. Retain a	rmit#_ copv fo	T VOU	records	88
							100	, , ,,,,,		

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/southwest/es/arizona/) for the most up-to-date version.

		Willo	w Flycate	cher (WIF	L) Survey at	nd Detection Form (revise	d Apri	1 2010))	
Site Name	Reach	res 7	1/75	7918	o'	State CA Count	1.0	< /	Angelo	25
						State A Count	.y <u></u>	2 /	(me	eters)
Is cop	y of USGS	, or Lake map mari	Name ked with s	Survey are	A LAV	ca RiVes sightings attached (as requ				No
Survey Co	ordinates: S	tart: E_C	358	349	N 38	029 UTM	Datum	NAD	83(See instru	ctions)
If surv	ey coordina	tes chang	ed between	en visits, e	nter coordinate	UTM UTM UTM tes for each survey in comm	zone _ ients se	ection	on back of th	is page.
r	T	**	Fill in a	dditiona	l site infori	mation on back of this	page	**		1 -0
Survey #					Nest(s) Found?	Comments (e.g., bird behavior;			ites for WIFL De	
	Date (m/d/y)		Estimate d	Estimated Number of	YorN	potential threats [livestock,	individ	uals, pa	onal column for ours, or groups of	birds found on
Observer(s) (Full Name)	Survey time	WIFLs	Number of Pairs	Territories		cowbirds, <i>Diorhabda</i> spp.]). If <i>Diorhabda</i> found, contact	necessa		Include additiona	ıl sheets if
					of nests	USFWS and State WIFL coordinator				
Survey # 1 Observer(s)	Date 5/23	,					# Birds	Sex	UTM E	UTM N
Jim	Start 6:05	1			. /					
	Stop 9:35	0			N					
Pike	Total hrs3.5									-
Survey # 2	Date 6/2	-								
Observer(s)		1			,		# Birds	Sex	UTM E	UTM N
Jim	Start 6:10	0			1					
Pike	Stop9:45				10					
	Total hrs3.5									
Survey # 3 Observer(s)	Date 6/16						# Birds	Sex	UTM E	UTM N
Jim	Start 6:05	_		_	/					
	Stop 9:40	0	0	0	N					
Pike	Total hrs3.5									
Observer(s)	Date 6/30						# Birds	Sex	UTM E	UTM N
Jim	Start 5:50			0	A 1 1					
11/0	Stop 9:00			\cup	10					
Pike	Total hrs 3.4	-								
Survey # 5	Date 7/13						# Birds	Sex	UTM E	UTM N
Observer(s)	Start 6:20				. []		Dirus	-	OTME	UIMIN
VIM 1	0:00	\bigcirc	0	01	NII					
Piko	Stop 7.55				' \					
	Total hrs	2				-		\dashv		
Overall Site Sum Totals do not equal th		Total	Total	Total	Total					
each column. Include	only	Adult Residents		Territories	Nests					\
resident adults. Do n migrants, nestlings, a	or morado	. condents				Were any Willow Flycatch	ers col	or-bar	nded? Yes	No 🔼
fledglings.						If yes, report color combina	ation(s) in th	e comments	
Be careful not to dou individuals.	ble count	0	01	0	0	section on back of form and	d repor	t to U	SFWS.	
Total Survey Hrs		_		l						
Reporting Inc	lividual	Vin	10 P:	Ke		D-1- D	-	120	112	
US Fish and				8379	46-4	_ Date Report Completed	it #	-47	115 9-	88

S Fish and Wildlife Service Permit # TE 832946 + 4 State Wildlife Agency Permit # 50 9 188

Submit form to USFWS and State Wildlife Agency by September 1". Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.
Reporting Individual Tim Pike Phone # 714-968-7977 Affiliation Subcontracting biologist for Bonterra E-mail Pike 44 @ earth link Site Name Reaches 71/75/79/80 Date Report Completed 7/29/13 Was this site surveyed in a previous year? Yes No Unknown Did you verify that this site name is consistent with that used in previous years? Yes No Not Applicable If site name is different, what name(s) was used in the past? If site was surveyed last year, did you survey the same general area this year? Yes No If no, summarize below. Did you survey the same general area during each visit to this site this year? Yes No If no, summarize below.
Management Authority for Survey Area: Federal Municipal/County State Tribal Private Name of Management Entity or Owner (e.g., Tonto National Forest) Los Angeles Dept of Public Wellength of area surveyed: 3.46 (km)
Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:
Native broadleaf plants (entirely or almost entirely, > 90% native)
Mixed native and exotic plants (mostly native, 50 - 90% native)
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names. Populus fre montili; Salix laevia at a Average height of canopy (Do not include a range): (meters)
Average height of canopy (Do not include a range): (meters)
Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.
Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.
features. Attach additional sheets if necessary.
Features. Attach additional sheets if necessary. Territory Summary Table. Provide the following information for each verified territory at your site. Territory All Dates UTM E UTM N Pair Nest Description of How You Confirmed Confirmed? Found? Territory and Breeding Status Y or N Y or N (e.g., vocalization type, pair interactions,
Features. Attach additional sheets if necessary. Territory Summary Table. Provide the following information for each verified territory at your site. Territory All Dates UTM E UTM N Pair Nest Description of How You Confirmed Confirmed? Found? Territory and Breeding Status Y or N Y or N (e.g., vocalization type, pair interactions,
Features. Attach additional sheets if necessary. Territory Summary Table. Provide the following information for each verified territory at your site. Territory All Dates UTM E UTM N Pair Nest Description of How You Confirmed Confirmed? Found? Territory and Breeding Status Y or N Y or N (e.g., vocalization type, pair interactions,
Features. Attach additional sheets if necessary. Territory Summary Table. Provide the following information for each verified territory at your site. Territory All Dates UTM E UTM N Pair Nest Description of How You Confirmed Confirmed? Found? Territory and Breeding Status Y or N Y or N (e.g., vocalization type, pair interactions,
Features. Attach additional sheets if necessary. Territory Summary Table. Provide the following information for each verified territory at your site. Territory All Dates UTM E UTM N Pair Nest Description of How You Confirmed Confirmed? Found? Territory and Breeding Status Y or N Y or N (e.g., vocalization type, pair interactions,

Site Name:				rks Soft-Botton		State: CA	County:		,	
USGS Quad		Newhall	OTT GOILO TTO	THO COIL BOLLOI	II GHAIIICIS	State. OA	Elevation:		(meter	2)
Creek, River,			Santa Clara	River Main C	hannel (Rea	nch 82) and Santa Clara River - South Bank				3)
						sightings attached (as required)?	Yes	X	No	
Survey Coord	_	Start:		-		3810290 UTM	Datum:			ructions)
,		Stop:			•	3810815 UTM	Zone:		(500 1115)	i deliono)
If s	survey coor				, enter co	ordinates for each survey in comme			of this page.	
	•					information on back of this p			1 8	
	Γ	Γ	Ι	Γ	Nest(s)	<u> </u>	Ť			
Survey#		Number of	Estimated	Estimated	Found?	Comments (e.g., bird behavior; evidence of pairs	or GPS Coordin	ates for W	IFL Detections	
Observer(s)	Date (m/d/y) Survey Time	Adult	Number of	Number of	Y or N	breeding;-potential threats [livestock, cowbirds, Diorhabda spp.]). If Diorhabda found, contact	(this is an op pairs, or grou		nn for documenting	individuals,
(Full Name)		WIFLs	Pairs	Territories	If Yes, number of	USFWS and State WIFL coordinator.			Iditional sheets if no	ecessary.
					nests					
Survey # 1	Date: 05/24/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s): B. Daniels	Start:			arti Tirili		erin de la constantina	0			
b. Daniels	0600						-			
	Stop:									
	0925	2.7.7	1							
	Total hrs:					THE STATE OF THE S				
Survey # 2	Date:						# Dinda	Cove	I ITO C E	TITTLE
Observer(s):	06/11/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
B. Daniels	Start:				10110		-			
	0600									
	Stop: 0845	y 15 m			ABI TO				311	
	Total hrs:									
	2.75									
Survey # 3	Date:	2	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	06/18/13	2	U	0	IN		1	unk	356079	3810302
B. Daniels	Start: 0530						1	male	355509	3810832
	Stop:						-			3 - 1 - 1 - 1
ar america	0915	100								
	Total hrs:									
	3.75					the control of the co				
Survey # 4 Observer(s):	Date: 06/26/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
B. Daniels	Start:	4.53					0			
	0600						-			
	Stop:							1112		
	0900 Total hrs:				Carlo Colle			1-4		
	3.0						-			
Survey # 5	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	07/9/13	0	0	0	N	Engagement of the Landsconnection	0		11/21	
B. Daniels	Start:				B(3)					
	0710						· <u>puritin</u>			
	Stop: 0945						_		24	
	Total hrs:									
	2.6									
Overall Site Sur										
Totals do not equal the column. Include only re		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Wang any WIFI a calon bandar	10 37		N	
Do not include migrants fledglings.	, nestlings, and	_100.00110		1011101103		Were any WIFLs color-banded	l? Yes		No X	
Be careful not to double	count	13-130-1		4-14-	15/45	If yes, report color co	mhination(a)	in the cor		
individuals. Total survey hrs	15.5	0	0	0	0	section on back of	5.5			
Reporting Individ	-	Brian E.	Daniels			Date Report Comple	ted:	2013		
US Fish & Wildli			TE82140	1-4		State Wildlife Agency P		SC-45	35	

Reporting Indi	ividual	Brian E. Daniels				Phone	# 626-351-2000
Affiliation	BonTerra C	onsulting				E-mail	bdaniels@bonterraconsulting.com
	•	Department of Public Work		nnels		Date report Complete	d 2013
	•	a previous year? Yes		Jnknown			
Did you verify t	hat this site	name is consistent with t	hat used in previo	us yrs?	Yes X	No	Not Applicable
If name is differ	rent, what n	ame(s) was used in the pa	st?				
If site was surve	eyed last yea	er, did you survey the sam	e general area this	s year?	Yes X	No	If no, summarize below.
Did you survey	the same ge	neral area during each vis	sit to this site this	year?	Yes X	No	If no, summarize below.
Management Au	uthority for	Survey Area:	Federal	Municipal/Cou	nty X	State	Tribal Private
Name of Manag	gement Entit	y or Owner (e.g., Tonto N	National Forest)	LA County De	partment of	Public Works (Flood Mair	tenance Division)
Length of area s	surveyed:	1.1		(l	m)		
Vegetation Char	racteristics:	Check (only one) catego	ry that best descri	bes the predom	nant tree/sh	rub foliar layer at this si	e:
X	Native	broadleaf plants (entirely	or almost entirely	, > 90% native)			
	Mixed 1	native and exotic plants (r	nostly native, 50 -	- 90% native)			
	Mixed	native and exotic plants (r	mostly exotic, 50	- 90% exotic)			
	Exotic/i	introduced plants (entirely	y or almost entirel	y, > 90% exotic)		5
		at tree/shrub species in ord olia, Populus fremontii	der of dominance.	Use scientific r	ame.		
Average height	of canopy (Do not include a range):	8 m			(meters)	
Attach the follow	wing: 1) co	py of USGS quad/topogra	aphical map (REC	(UIRED) of sur	vey area, ou	tlining survey site and lo	cation of WIFL detections;
2) sketch or aeri	ial photo sh	owing site location, patch	shape, survey rou	ite, location of a	ny detected	WIFLs or their nests;	
3) photos of the	interior of t	the patch, exterior of the p	oatch, and overall	site. Describe a	ny unique l	nabitat features in Comm	ents.
Comments (such	h as start an	d end coordinates of surv	ey area if changed	l among surveys	, supplemer	ntal visits to sites, unique	habitat features.
Attach additiona	al sheets if r	necessary.					

Main channel of the Santa Clara River downstream (west) of McBean Parkway in Santa Clarita. This is at the confluence with San Francisquito Creek. Some relatively old riparian forest is present along north side of channel that is dominated by cottonwoods. The rest of the channel contains relatively young riparian habitats dominated by willows.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)
-						
		·				

Site Name:				rks Soft Botton		State: CA	_ County:	Los Ange		
USGS Quad 1		Newhall					Elevation:	323	(meters)
Creek, River,				ek (Reach #8						
						sightings attached (as required)?	Yes	<u>X</u>	No	
Survey Coord	inates:	Start:				3812994 UTM .	Datum:		(See instr	ructions)
10		Stop:				3812307 UTM	Zone:		C.1.	
If s	urvey coor	dinates cl				ordinates for each survey in comme information on back of this p		on back	of this page.	
			Tut t		Nest(s)	njormunon on ouck oj inis p	uge			
					Found?	Comments (e.g., bird behavior; evidence of pairs of	or GPS Coordin	ates for W	FL Detections	
Survey # Observer(s)	Date (m/d/y)	Number of Adult	Estimated Number of	Estimated Number of	Y or N	breeding;-potential threats [livestock, cowbirds,	(this is an op	tional colum	nn for documenting	individuals,
(Full Name)	Survey Time	WIFLs	Pairs	Territories	If Yes, number of	Diorhabda spp.]). If Diorhabda found, contact USFWS and State WIFL coordinator.	pairs, or grou each survey).		found on Iditional sheets if ne	cessary.
					nests	ч	7000		<u>'</u>	180
Survey # 1	Date: 05/22/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s): A. Heredia	Start:						0			
A. Heredia	0820									
William I	Stop: 0920								. 5.5172	
	Total hrs:							31.		
	1.0							<u> J</u> ile		
Survey # 2	Date: 06/07/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s): A. Heredia	Start:						0			
711010010	0820									
	Stop: 0950									
	Total hrs:						1			
×	1.5									
Survey # 3	Date: 06/18/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s): A. Heredia	Start:						0			
7. Heredia	0630							1 22-		
	Stop: 0800									
	Total hrs:									
	1.5									
Survey # 4	Date: 07/02/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s): A. Heredia	Start:						0		*	
	0630									- 15
	Stop: 0800						7			
	Total hrs:									
	1.5									
Survey # 5 Observer(s):	Date: 07/12/13	0	0	0	N		# Birds	Sex	UTM E	UTM N
A. Heredia	Start:			1			0			
	0745									
	Stop: 0950									
	Total hrs:									
	2.1									
Overall Site Su										
Totals do not equal the column. Include only r	esident adults.	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded	l? Yes		No	
Do not include migrant: fledglings.	s, nestlings, and					ole any wil 23 color-banded	. 168			
Be careful not to double individuals.	count					If yes, report color co	ombination(s)	in the cor	mments	
Total survey hr	7.6	0	0	0	0	section on back of				
Reporting Individ	lual:	Amber C	neal Here			Date Report Comple	eted:	2013		
US Fish & Wildli	fe Service Pe	rmit #:	TE14855	4-2		State Wildlife Agency P	ermit #:	SC-67	61	

Reporting Individual Amber Oneal Heredia	Phone #	714-444-9199
Affiliation BonTerra Consulting	E-mail	aheredia@bonterraconsulting.com
Site Name LA County Department of Public Works Soft Bottom Channels Date re	oort Completed	2013
Was this site surveyed in a previous year? Yes × No Unknown		
Did you verify that this site name is consistent with that used in previous yrs? Yes X	No	Not Applicable
If name is different, what name(s) was used in the past?		
If site was surveyed last year, did you survey the same general area this year? Yes X	No	If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes X	No	If no, summarize below.
Management Authority for Survey Area: Federal Municipal/County X	State	Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) LA County Department of Public W	orks (Hired by Flo	od Maintenance Division)
Length of area surveyed: Reach 87/97 (0.80 km) (km)		
Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub folia	r layer at this site	:
Native broadleaf plants (entirely or almost entirely, > 90% native)		
X Mixed native and exotic plants (mostly native, 50 - 90% native)		
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)		
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)		
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Salix lasiolepis, Populus fremontii, Tamarix sp.		
Average height of canopy (Do not include a range): 15m	(meters)	
Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining s	irvey site and loc	ation of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs	or their nests;	
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat fe	atures in Comme	nts.
Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits Attach additional sheets if necessary.	to sites, unique l	nabitat features.
There is good cottonwood-willow riparian forest at this location; however, the amount of Tarsubstantially since the last surveys in 2011.	marisk in this re	each has increased

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Site Name:	LA County D	epartment o	of Public Wo	rks Soft-Botton	n Channels	State: CA		County:	Los Ange	eles	
USGS Quad 1	Name:	Newhall						Elevation:	353	(meters)
Creek, River,				nyon Channel							
Is copy of	of USGS m	ap marke	ed with su	rvey area ai	nd WIFL	sightings attach	ed (as required)?	Yes	X	No	
Survey Coord	linates:	Start:	E 35845	59		3810685	UTM	Datum:		(See instr	ructions)
		Stop:	E 35816			3810426	UTM	Zone:			
If s	survey coor	dinates cl					h survey in comme n back of this p		on back	of this page.	
			T ttt t	n uuunion	Nest(s)	T T T T T T T T T T T T T T T T T T T		uge T			
0 "		N. 1	E di control	F. C 1	Found?	Comments (e.g., bird be	ehavior; evidence of pairs of	r GPS Coordin	ates for WI	FL Detections	
Survey # Observer(s)	Date (m/d/y)	Number of Adult	Estimated Number of	Estimated Number of		breeding;-potential three				nn for documenting	individuals,
(Full Name)	Survey Time	WIFLs	Pairs	Territories	If Yes, number of	USFWS and State WIF	iorhabda found, contact L coordinator.	pairs, or grou each survey).		toung on Iditional sheets if ne	cessary.
		5			nests						
Survey # 1	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s):	05/30/13 Start:							0			
B. Daniels	0800										
	Stop:										
	0900										
	Total hrs:							-			
Survey # 2	Date:							# Birds	Sex	UTM E	UTM N
Observer(s):	06/13/13	0	0	0	N			0	Gex	OTME	OTIVITY
B. Daniels	Start:								4//		
	0745										
	Stop: 0900										
	Total hrs:										
C	1.3 Date:							# Diada	0	LITTACE	LITTALNI
Survey # 3 Observer(s):	06/20/13	0	0	0	N			# Birds	Sex	UTM E	UTM N
B. Daniels	Start:										
	0730										
	Stop: 0830							-		,	
	Total hrs:										
	1.0										
Survey # 4	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s): B. Daniels	06/27/13 Start:	(Publication						0			
D. Darlicio	0810	1533									
	Stop: 0915										
	Total hrs:										
	1.1										
Survey # 5	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s):	07/10/13							0			
B. Daniels	Start: 0700				M 27 11						
	Stop:										
	0800								- Init		3 7 3
	Total hrs:										
Overall Site Su											
Totals do not equal the	sum of each	Total Adult	Total Pairs	Total	Total Nests						
column. Include only r Do not include migrant		Residents	10.0011 0.113	Territories	10001110015	Were a	ny WIFLs color-banded	l? Yes		No	
fledglings. Be careful not to doubl	e count					1	TC		11		•
individuals		0	0	0	0		If yes, report color co section on back of				
Total survey hr Reporting Individ		Brian E.	Daniels			L	Date Report Comple		2013		
US Fish & Wildl			TE82140	1-4			State Wildlife Agency P		SC-45	 35	

Reporting Indi	ividual	Brian E. Daniels					Phone #	626-351-200	0
Affiliation	BonTerra C	onsulting					E-mail	bdaniels@bo	nterraconsulting.com
	•	Department of Public Wo		annels		Date report Co	ompleted	2013	
Was this site s	urveyed in	n a previous year? Ye	s <u>×</u> No U	Jnknown	_				
Did you verify the	hat this site	name is consistent with	that used in previo	ous yrs?	Yes X	No		Not	Applicable
If name is differ	ent, what r	ame(s) was used in the p	oast?						
If site was surve	eyed last ye	ar, did you survey the sa	me general area thi	is year?	Yes X	No		If no, summar	ize below.
Did you survey	the same go	eneral area during each v	risit to this site this	year?	Yes X	No		If no, summar	ize below.
Management Au	athority for	Survey Area:	Federal	Municipal/Co	ounty X	State		Tribal	Private
Name of Manag	gement Enti	ty or Owner (e.g., Tonto	National Forest)	LA County D	Department	of Public Works (F	lood Maint	enance Divisio	on)
Length of area s	surveyed:	0.4			(km)				
Vegetation Char	racteristics	Check (only one) categ	ory that best descr	ibes the predon	ninant tree/	shrub foliar layer	at this site	:	
	Native	broadleaf plants (entirel	y or almost entirely	y, > 90% native	:)				
X	Mixed	native and exotic plants	(mostly native, 50	- 90% native)					
	Mixed	native and exotic plants	(mostly exotic, 50	- 90% exotic)					
	Exotic	introduced plants (entire	ely or almost entire	ly, > 90% exoti	c)				
•		nt tree/shrub species in c iolia, Populus fremontii	order of dominance	. Use scientific	name.				
Average height	of canopy (Do not include a range):	10 m				(meters)		
Attach the follow	wing: 1) co	ppy of USGS quad/topog	graphical map (REG	QUIRED) of su	rvey area, o	outlining survey si	te and loc	ation of WIFI	L detections;
2) sketch or aeri	ial photo sh	owing site location, pate	ch shape, survey ro	ute, location of	any detecte	ed WIFLs or their	nests;		
3) photos of the	interior of	the patch, exterior of the	patch, and overall	site. Describe	any unique	e habitat features i	n Comme	nts.	
		d end coordinates of sur	vey area if change	d among survey	s, supplem	ental visits to sites	s, unique l	nabitat feature	es
Attach additiona	al sheets if	necessary.							

A dense grove of willows and cottonwoods follows the active channel that is at the foot of the levee on the right (west) bank. Otherwise the channel contains scattered mule fat and invasives such as arundo donax.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Site Name:	LA County E	Department	of Public Wo	rks Soft Botton	n Channels	State: CA	County:	Los Ange	eles	
USGS Quad	Name:	Newhall					Elevation:	315	(meters	s)
Creek, River,				ek (Reach # 10						
	=	-		-		sightings attached (as required)?	Yes	X	No	
Survey Coord	inates:	Start:				3812915 UTM	Datum:		(See inst	ructions)
ī£.		Stop:				3812352 UTM ordinates for each survey in comme	Zone:		of this maga	
11 8	survey coor	umates ci				information on back of this p		on back	t of this page.	
				Ī	Nest(s)		Ť			
Survey #	D-t- (/1/-)	Number of	Estimated	Estimated	Found? Y or N	Comments (e.g., bird behavior; evidence of pairs			IFL Detections nn for documenting	:
Observer(s) (Full Name)	Date (m/d/y) Survey Time	Adult	Number of Pairs	Number of Territories	If Yes,	breeding;-potential threats [livestock, cowbirds, Diorhabda spp.]). If Diorhabda found, contact	pairs, or grou			individuais,
(Full Name)		WIFLs	rans	Territories	number of	USFWS and State WIFL coordinator.	each survey).	Include ac	lditional sheets if ne	cessary.
Survey # 1	Date:				nests		# Birds	Sex	UTM E	UTM N
Observer(s):	05/22/13	0	0	0	N		0			
A. Heredia	Start:									
	0650 Stop:	56								
	0820									
	Total hrs:						1	1 11/11		
Survey # 2	Date:	0	0	0			# Birds	Sex	UTM E	UTM N
Observer(s):	06/07/13	0	0	0	N		0			
A. Heredia	Start: 0720									1
	Stop:									
	0820									
	Total hrs: 1.0		4					/		
Survey # 3	Date:						# Birds	Sex	UTM E	UTM N
Observer(s):	06/18/13	0	0	0	N		0			
A. Heredia	Start: 0900						1			
	Stop:									
	0945									
	Total hrs: 0.8						-			
Survey # 4	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	07/02/13	U	U	U	IN		0			
A. Heredia	Start: 0800									
	Stop:									
	0840							27713		
	Total hrs: 0.7									
Survey # 5	Date:	0	0	0	N		# Birds	Sex	UTM E	UTM N
Observer(s):	07/12/13						0			
A. Heredia	Start: 0645									
	Stop:									
	0745 Total hrs:						-			
	1.0									
Overall Site Su		7								
Totals do not equal the column. Include only r		Total Adult Residents	Total Pairs	Total Territories	Total Nests	NV WIFI lank la	10 77			
Do not include migrant fledglings.		Acsidents		Territories		Were any WIFLs color-bande	d? Yes		No	
Be careful not to double individuals.	count	1 3,67				If yes, report color c	ombination(s)	in the con	mments	•
Total survey hr	s: 5	0	0	0	0	section on back o	, ,			
Reporting Individ	lual:	Amber C	neal Here			Date Report Comple	eted:	2013		
US Fish & Wildl	fe Service Pe	rmit #:	TE14855	4-2		State Wildlife Agency I	Permit #:	SC-67	61	

Reporting Inc	dividual	Amber Oneal Heredia			Phone #	714-444-9199
Affiliation	BonTerra (Consulting			E-mail	aheredia@bonterraconsulting.com
Site Name	LA County	Department of Public Works Soft Bo	tom Channels		Date report Completed	2013
	-	n a previous year? Yesx No				
Did you verify	that this site	e name is consistent with that used i	n previous yrs?	Yes X	No	Not Applicable
If name is diffe	erent, what r	name(s) was used in the past?				
If site was surv	eyed last ye	ear, did you survey the same general	area this year?	Yes X	No	If no, summarize below.
Did you survey	the same g	eneral area during each visit to this	site this year?	Yes X	No	If no, summarize below.
Management A	Authority for	Survey Area: Federal	Municipal/Cou	nty X	State	Tribal Private
Name of Mana	gement Ent	ity or Owner (e.g., Tonto National I	Forest) LA County De	partment o	f Public Works (Hired by Flo	ood Maintenance Division)
Length of area	surveyed:	Reach 104 (0.52 km)	(k	m)		
Vegetation Cha	aracteristics	: Check (only one) category that be	est describes the predomi	nant tree/s	hrub foliar layer at this site	::
	_ Native	broadleaf plants (entirely or almos	t entirely, > 90% native)			
Х	Mixed	native and exotic plants (mostly na	tive, 50 - 90% native)			
	Mixed	native and exotic plants (mostly ex	otic, 50 - 90% exotic)			
	Exotic	/introduced plants (entirely or almo	st entirely, > 90% exotic)		
•	•	ant tree/shrub species in order of don sp., Populus fremontii	ninance. Use scientific n	ame.		
Average height	t of canopy	(Do not include a range):	15 m		(meters)	
Attach the follo	owing: 1) c	opy of USGS quad/topographical m	nap (REQUIRED) of sur	vey area, o	utlining survey site and loc	ation of WIFL detections;
2) sketch or aer	rial photo sh	nowing site location, patch shape, si	arvey route, location of a	ny detecte	d WIFLs or their nests;	
3) photos of the	e interior of	the patch, exterior of the patch, and	l overall site. Describe a	ny unique	habitat features in Comme	nts.
Comments (suc	ch as start ai	nd end coordinates of survey area if	changed among surveys	, suppleme	ntal visits to sites, unique	habitat features.
Attach addition	nal sheets if	necessary.				
Habitat at thi	is location	is primarily alluvial sage scrub	with scattered mule	fat and a	few patches of large w	illows and cottonwoods near

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

the outflow of a drain.

Site Name:	LA County D	Department	of Public Wo	rks Soft-Bottor	n Channels	State: CA			County:	Los Ange	eles	
USGS Quad	Name:	Newhall							Elevation:	352	(meter	s)
Creek, River,				quito Channel	`							
	-	-		-		sightings atta		-	Yes	<u>*</u>	No	-
Survey Coord	linates:	Start:	E 3569			3812709		UTM	Datum:		(See inst	tructions)
**		Stop:	E 3568		•	3812286		UTM	Zone:			
lf s	survey coor	dinates cl				ordinates for e information				on back	of this page.	•
		·	Tui		Nest(s)	injormuuon 1	on buck	oj inis po	uge T			
Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Found? Y or N If Yes, number of nests	Comments (e.g., bin breeding;-potential Diorhabda spp.]). USFWS and State V	threats [livestoo If Diorhabda f	ck, cowbirds, ound, contact	(this is an op- pairs, or grou	tional colun ps of birds	n for documenting	
Survey # 1	Date:	0	0	0	N				# Birds	Sex	UTM E	UTM N
Observer(s):	05/24/13					151.54			0			
B. Daniels	Start: 0930	Wile										
	Stop: 1010	Sparte Stant			20.00							
	Total hrs: 0.7											
Survey # 2	Date:	0	0	0	N		14,2-7		# Birds	Sex	UTM E	UTM N
Observer(s):	06/11/13		O	O					0			
B. Daniels	Start: 0855				4							
	Stop: 0945											
	Total hrs:											
Survey # 3	Date:	2	0	0	N				# Birds	Sex	UTM E	UTM N
Observer(s):	06/18/13	2	O	O					2	males	356731	3812706
B. Daniels	Start: 0920											
	Stop: 1015											
	Total hrs: 0.9											
Survey # 4	Date:	4	0	0	NI				# Birds	Sex	UTM E	UTM N
Observer(s):	06/26/13	1	0	U	N				1	unk	356898	3812686
B. Daniels	Start: 0905											
	Stop: 1115											
	Total hrs:								7			
	2.2	WALLEY OF										FULL
Survey # 5	Date: 07/9/13	0	0	0	N				# Birds	Sex	UTM E	UTM N
Observer(s): B. Daniels	Start:								0			
2, 24, 110, 10	0600											
	Stop: 0700					41144						
	Total hrs:											
Overall Site Su												
Fotals do not equal the column. Include only root on one migrant deglings.	sum of each esident adults.	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Wes	re any WIFLs	s color-banded	? Yes	,	No	
Be careful not to double ndividuals. Fotal survey hr		0	0	0	0	· v		report color co on on back of	1 /			
Reporting Individ	lual:	Brian E.	Daniels				Date R	eport Complet	ed:	2013		
US Fish & Wildl	ife Service Pe	rmit #:	TE82140	1-4			State Wild	life Agency Pe	rmit #:	SC-45	35	

Reporting Inc	dividual	Brian E. Daniels	•			Phor	ne # 626-351-2000
Affiliation	BonTerra (Consulting				E-m	ail bdaniels@bonterraconsulting.com
Site Name	LA County	Department of Public Work	s Soft-Bottom Cha	innels		Date report Comple	eted 2013
	-	n a previous year? Yes		Jnknown			
Did you verify	that this sit	e name is consistent with t	hat used in previo	ous yrs?	Yes X	No	Not Applicable
If name is diffe	erent, what i	name(s) was used in the pa	ıst?				
If site was surv	veyed last ye	ear, did you survey the san	ne general area thi	s year?	Yes X	No	If no, summarize below.
Did you survey	y the same g	eneral area during each vis	sit to this site this	year?	Yes X	No	If no, summarize below.
Management A	Authority for	Survey Area:	Federal	Municipal/Cou	nty X	State	Tribal Private
Name of Mana	agement Ent	ity or Owner (e.g., Tonto 1	National Forest)	LA County De	partment of	f Public Works (Flood M	faintenance Division)
Length of area	curveyed:	0.4		а	m)		
Length of area	sui veyeu.				111)		
Vegetation Cha	aracteristics	: Check (only one) categor	ry that best descri	ibes the predomi	nant tree/sł	nrub foliar layer at this	site:
X	Native	broadleaf plants (entirely	or almost entirely	y, > 90% native)			
	_ Mixed	native and exotic plants (mostly native, 50	- 90% native)			
	_ Mixed	native and exotic plants (mostly exotic, 50	- 90% exotic)			
	Exotic	/introduced plants (entirel	y or almost entirel	ly, > 90% exotic)		
-	-	nt tree/shrub species in or sp., Populus fremontii	der of dominance.	. Use scientific r	ame.		
Average height	t of canopy	(Do not include a range):	2 m			(meter	rs)
Attach the follo	owing: 1) c	ony of USGS quad/topogr	anhical man (RFC	OUIRED) of sur	vev area. oi	ıtlining survey site and	l location of WIFL detections;
	- .	nowing site location, patch		-	•		
*	-	the patch, exterior of the		Ť	•	· · · · · · · · · · · · · · · · · · ·	
		•	, ,				
Comments (suc Attach addition		nd end coordinates of surv necessary.	ey area if changed	d among surveys	, suppleme	ntal visits to sites, unio	<u>que habitat features.</u>
•		tlets with water, this choods on west side of c	•	d dominated b	y mule fa	t. Willows dominate	e the outlets; couple dry patches

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)
			<u> </u>			

Site Name:	LA County D	Department	of Public Wo	rks Soft Botton	n Channels	State: CA		County:	Los Ange	eles	
USGS Quad 1		Newhall]	Elevation:	351	(meters	s)
Creek, River,				ek (Reach # 1							
	-	-		1.5			hed (as required)?	Yes	<u>X</u>	No	
Survey Coord	linates:	Start:			•	3817198	UTM	Datum:		(See inst	ructions)
		Stop:	-			3816785	UTM	Zone:	_	0.1.	
If s	survey cooi	dinates c					ch survey in commer on back of this po		on back	of this page.	
			1 111 1		Nest(s)	l l	on buck of this pe	18 ^c			
S		Number of	Estimated	Estimated	Found?	Comments (e.g., bird	behavior; evidence of pairs or	GPS Coordin	ates for WI	FL Detections	
Survey # Observer(s)	Date (m/d/y) Survey Time	Number of Adult	Number of	Number of	Y or N	U, 1	reats [livestock, cowbirds, Diorhabda found, contact	(this is an op- pairs, or grou		nn for documenting	; individuals,
(Full Name)	Survey Time	WIFLs	Pairs	Territories	If Yes, number of	USFWS and State WI				lditional sheets if no	ecessary.
					nests						
Survey # 1	Date: 05/22/13	1	0	0	N	Visually observe	ed individual foraging.	# Birds	Sex	UTM E	UTM N
Observer(s): A. Heredia	Start:			31 (1-1)		Individual was s	silent, no lot observed on any	1		351721	3817090
7t. Floredia	0920						ys, presumed to be a	-	- 1		
	Stop:				Tright.	migrant.					TO THE
	Total hrs:							1			
	0.9										
Survey # 2	Date:	0	0	0	N		Maria Cara Cara Cara Cara Cara Cara Cara	# Birds	Sex	UTM E	UTM N
Observer(s):	06/07/13	J	ŭ					0			
A. Heredia	Start: 0620										
	Stop:										
	0720										
	Total hrs:				21177						
Survey # 3	Date:							# Birds	Sex	UTM E	UTM N
Observer(s):	06/18/13	0	0	0	N			0	COX	CHAL	CIMIT
A. Heredia	Start:										
	0800 Stop:										
	0900					all falls					
	Total hrs:										
Survey # 4	1.0 Date:							# Diada	0	LITTLE	TITTLE
Observer(s):	07/02/13	0	0	0	N			# Birds	Sex	UTM E	UTM N
A. Heredia	Start:		1								
7.109	0840										
	Stop: 0910										
	Total hrs:										
	0.5										
Survey # 5 Observer(s):	Date: 07/12/13	0	0	0	N			# Birds	Sex	UTM E	UTM N
A. Heredia	Start:							0			
	0950										
	Stop: 1020										
	Total hrs:										
	0.5										
Overall Site Sur	1.50										
Totals do not equal the column. Include only re		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Wana	any WIFLs color-banded) 17		No	
Do not include migrants fledglings.	s, nestlings, and					were	any wires color-banded	? Yes		No	
Be careful not to double individuals.	count		2011	The same			If yes, report color co	mbination(s)	in the con	nments	-
Total survey hr	S: 3.9	0	0	0	0		section on back of				
Reporting Individ		Amber C	neal Here	edia			Date Report Complet	ed:	2013		
US Fish & Wildli	1		TE14855				State Wildlife Agency Pe		SC-67	61	

Reporting Individual Amber Oneal Heredia	Phone # 714-444-9199
Affiliation BonTerra Consulting	E-mail aheredia@bonterraconsulting.com
Site Name LA County Department of Public Works Soft Bottom Channels Date report 0	Completed 2013
Was this site surveyed in a previous year? Yes × No Unknown	
Did you verify that this site name is consistent with that used in previous yrs? Yes X No	Not Applicable
If name is different, what name(s) was used in the past?	
If site was surveyed last year, did you survey the same general area this year? Yes X No.	If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes X No	If no, summarize below.
Management Authority for Survey Area: Federal Municipal/County X Stat	e Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) LA County Department of Public Works (Hired by Flood Maintenance Division)
Length of area surveyed: Reach 106 (0.43 km) (km)	
Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer	r at this site:
Native broadleaf plants (entirely or almost entirely, > 90% native)	
Mixed native and exotic plants (mostly native, 50 - 90% native)	
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)	
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)	
Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name. Salix lasiolepis, Tamarix sp., Baccharis salicifolia	
Average height of canopy (Do not include a range): 12 m	(meters)
Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey	site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or the	r nests;
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features	in Comments.
Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sit Attach additional sheets if necessary.	es, unique habitat features.
Habitat at this location is somewhat degraded. Although there is a willow canopy, the understory	

reach, and it is heavily invaded by Tamarisk. The drainage is limited to a channel between the Interstate-5 and the Castaic Sports Complex.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Site Name:			-	rks Soft-Botton		State: CA	ion Form (Tevis	County:			
USGS Quad I	Vame:	Newhall ar	nd Val Verde					Elevation:	361	(met	ers)
Creek, River,	or Lake Na	ame:	Hasley Can	yon Channel (F	Reach 110)						
Is copy of	f USGS m	ap marke	ed with su	rvey area ai	nd WIFL	sightings attach	ed (as required)?	Yes	X	No	
Survey Coord	inates:	Start:	E 3495	11	N	3813766	UTM	Datum:	WGS84	(See i	nstructions)
•		Stop:	E 35078		N	3812746	UTM	Zone:	11		
If s	urvev coor		nanged bet	ween visits.	enter co	ordinates for each	h survey in comme	nts section	on back	of this pag	ge.
	,						n back of this p				
					Nest(s)	,	<i>J</i> 1	Ī			
					Found?	Comments (e.g., bird b	ehavior; evidence of pairs o	GPS Coordin	ates for WI	FL Detections	
Survey # Observer(s)	Date (m/d/y)	Number of Adult	Estimated Number of	Estimated Number of	Y or N	0,1	ats [livestock, cowbirds,				ing individuals,
(Full Name)	Survey Time	WIFLs	Pairs	Territories	If Yes,	Diorhabda spp.]). If D USFWS and State WIF	iorhabda found, contact	pairs, or grou		found on Iditional sheets i	f necessary
					number of nests	OSI WS and State Will	2 0001 0 11111011				,-
Survey # 1	Date:	0	0	0	NI	11.7-		# Birds	Sex	UTM E	UTM N
Observer(s):	05/30/13	U	0	U	N			0			
B. Daniels	Start:								111111		
	0610								14		
	Stop: 0745										
	Total hrs:										
	1.6										
Survey # 2	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s):	06/13/13	0	0	0	N			0			
B. Daniels	Start:					Salt Control					
	0550										
	Stop: 0730	e (1900)									
	Total hrs:										
	1.7										
Survey # 3	Date:	0						# Birds	Sex	UTM E	UTM N
Observer(s):	06/20/13	0	0	0	N			0			
B. Daniels	Start:				rial .						
	0545										
	Stop:							•			
	0715 Total hrs:										
	1.5										
Survey # 4	Date:	_						# Birds	Sex	UTM E	UTM N
Observer(s):	06/27/13	0	0	0	N			0	700		
B. Daniels	Start:										
	0545										
	Stop: 0700			• // = -							
	Total hrs:	in the						-		1	
	1.25	3411									
Survey # 5	Date:	0	0	0	N			# Birds	Sex	UTM E	UTM N
Observer(s):	07/10/13	0	0	U	N			0			
B. Daniels	Start:										
	0545										-1
	Stop: 0645			E E E E							
	Total hrs:										
	1.0			A THE PARTY	4						
Overall Site Su											
Totals do not equal the	sum of each	Total Adult	Total Pairs	Total	Total Nests						
column. Include only r Do not include migrant		Residents	Total Falls	Territories	10111110515	Were a	iny WIFLs color-banded	? Yes		No	
fledglings. Be careful not to double											
individuals.	Count	0	0	0	0		If yes, report color co				
Total survey hr	s: 7.1						section on back of	torm and rep		- WS.	
Reporting Individ	lual.	Brian F	Daniels				Date Report Comple	ed·	2013		

TE821401-4

US Fish & Wildlife Service Permit #:

State Wildlife Agency Permit #:

SC-4535

Reporting Individual Brian E. Daniels		Phone # 626-351-2000
Affiliation BonTerra Consulting		E-mail bdaniels@bonterraconsulting.com
Site Name LA County Department of Public Works Soft-Bottom Channels	Date report Co	ompleted 2013
Was this site surveyed in a previous year? Yes × No Unknown Did you verify that this site name is consistent with that used in previous yrs?		Not Applicable
If name is different, what name(s) was used in the past?		
If site was surveyed last year, did you survey the same general area this year?	Yes X No	If no, summarize below.
Did you survey the same general area during each visit to this site this year?	Yes X No	If no, summarize below.
Management Authority for Survey Area: Federal Mun	icipal/County X State	Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest)	County Department of Public Works (Fl	ood Maintenance Division)
Length of area surveyed: 1.75	(km)	
Length of area surveyed.	(Kill)	
Vegetation Characteristics: Check (only one) category that best describes the	predominant tree/shrub foliar layer	at this site:
X Native broadleaf plants (entirely or almost entirely, > 90%	% native)	
Mixed native and exotic plants (mostly native, 50 - 90% r	native)	
Mixed native and exotic plants (mostly exotic, 50 - 90% e	exotic)	
Exotic/introduced plants (entirely or almost entirely, > 90	% exotic)	
Identify the 2-3 predominant tree/shrub species in order of dominance. Use so Salix sp., Baccharis salicifolia, Populus fremontii	ientific name.	
Average height of canopy (Do not include a range): 5 m		(meters)
Attach the following: 1) copy of USGS quad/topographical map (REQUIRE) sketch or aerial photo showing site location, patch shape, survey route, location, patch		
3) photos of the interior of the patch, exterior of the patch, and overall site.	•	-
Comments (such as start and end coordinates of survey area if changed among Attach additional sheets if necessary.	g surveys, supplemental visits to sites	s, unique habitat features.
A fairly narrow and dry channel that transitions from dense woodla	nd downstream to sparse shrub	os at its upstream terminus.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)
			=			
				•		
· ·						

APPENDIX G LEAST BELL'S VIREO SURVEY DATA SUMMARY SHEETS

LEAST BELL'S VIREO SURVEY DATA SUMMARY

			Site In	formation			
Project Title:	Soft-botto	om Channel Reach	ı 12				
Landowner:	Los Ange	eles County Depart	ment of Pub	olic Works			
			Survey I	Informatio	ń		
Surveyors:	Steve Mo	orris, Brian Daniels				Year:	2013
Surve	y Begin Co	ordinates		Survey End (Coordinates		Datum
Northing:	3792715		Northing:	3792737			WGS84
Easting:	378432		Easting:	378233			WGS84
Survey Leng	th (Km)	Total Nun	nber of Surv	veys	Tot	al Number	of Survey Hours
0.2			9			7	7.8
		Least Be	ell's Vireo 🏻	Detection I	nformatio	า	
Number of ma	les that w	ere:		_			
		Paired:	0	Based on obser (nest-building, f		e, nest, young, o	or nesting behavior
	Unde	etermined Status:	0	The total numb	er of resident m	ales not confirm	ned as paired.
		Transient:	0	Only detected of at the same loc			or were not detected
	Total	number of males:	0	The sum of the	three categorie	s above.	
	Coordin	nates for LBVI Te	rritories (c	ontinue on	second sh	eet if nece	essary)
Territory ID	l	Northing		Easting	nments (e.g. paired)		
·							***************************************
			, , , , , , , , , , , , , , , , , , ,				**************************************

LEAST BELL'S VIREO SURVEY DATA SUMMARY

Site Information								
Project Title:	e: Soft-bottom Channel Reach 14							
Landowner: Los Angeles County Department of Public Works								
	Survey Information							
Surveyors:	urveyors: Steve Morris, Brian Daniels Year: 2013							
Survey Begin Coordinates			Survey End Coordinates			.	Datum	
Northing:	3797657		Northing: 3797496				WGS84	
Easting:	370286		Easting:	Easting: 370286			WGS84	
Survey Leng	th (Km)	Total Nun	nber of Surv	ber of Surveys Total i			l Number of Survey Hours	
0.2				9			13	
		Least Be	ell's Vireo [Detection I	nformatio	n -		
Number of ma	les that w	ere:		1				
		Paired:	1	Based on observation of female, nest, young, or nesting behavior (nest-building, food carrying). The total number of resident males not confirmed as paired.				
	Und	etermined Status:	1					
Transient:			Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.					
Total number of males:			The sum of the three categories above.					
	Coordin	nates for LBVI Te	rritories (c	ontinue on	second sh	eet if nece	essary)	
Territory ID		Northing Easting		Easting		Status/Comments (e.g. pa		
1	,	3797539	370290			unpaired		
2	3797504		370436			paired/2+ fledglings		

LEAST BELL'S VIREO SURVEY DATA SUMMARY

			Site In	iormation				
Project Title:	Soft-bottom Channel Reach 27							
Landowner:	Los Angeles County Department of Public Works							
Survey Information								
Surveyors:	Steve Mo	rris, Brian Daniels			Year:	2013		
Survey Begin Coordinates			Survey End Coordinates			5	Datum	
Northing:	3739755		Northing:	Northing: 3740748			WGS84	
Easting:	380800		Easting:	380667			WGS84	
Survey Leng	Survey Length (Km) Total Nun			nber of Surveys To		tal Number of Survey Hours		
1.0		9		15				
		Least Bo	ell's Vireo D	Detection l	nformatio	በ		
Number of ma	les that w	ere:						
		Paired:	0	Based on observation of female, nest, young, or nesting behavior (nest-building, food carrying).				
Undetermined Status:			1	The total number of resident males not confirmed as paired. Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.				
Transient:			0					
	Total	number of males:	1	The sum of the three categories above.				
	Coordinates for LBVI Territories (continue on second sheet if necessary)							
Territory ID		Northing		Easting		Status/Com	nments (e.g. paired)	
1	;	3740573	38062				unpaired	

	Cololidius/ies toli TPAI le	rritories (continue on second sh	(eet ir nedessary)
Territory ID	Northing	Easting	Status/Comments (e.g. paired)
1	3740573	380620	unpaired

Site Information

Project Title:	Soft-botto	Soft-bottom Channel Reach 28							
Landowner:	Los Ange	les County Depart	ment of Pub	lic Works					
			Survey	nformatio	n .				
Surveyors:	Steve Mo	rris, Brian Daniels				Year:	2013		
Surve	y Begin Co	ordinates		Survey End Coordinates			Datum		
Northing:	3776074		Northing:	3776450			WGS84		
Easting:	335965		Easting:	335802			WGS84		
Survey Leng		Total Nun	nber of Surv	eys	Tot	al Number	of Survey Hours		
0.4			9			9	.3		
		Least Be	ell's Vireo 🛚	Detection I	nformatio	n			
Number of ma	les that w	ere:							
		Paired:	0	Based on obser (nest-building,		e, nest, young, o	r nesting behavior		
Undetermined Status:			0	The total number of resident males not confirmed as paired.					
Transient:			0	Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.					
	Total	number of males:	0	The sum of the	three categorie	s above.			
	Coordin	nates for LBVI Te	rritories (co	ontinue on	second sh	eet if nece	ssary)		
Territory ID		Northing		Easting		Status/Con	nments (e.g. paired)		
-									
	·								

			Site In	formation					
Project Title:	Soft-botto	om Channel Reach	1 39						
Landowner:	Los Ange	eles County Depart	tment of Pub	lic Works					
			Survey I	nformation	î	ľ			
Surveyors:	Steve Mo	orris, Brian Daniels				Year:	2013		
Surve	Survey Begin Coordinates			Survey End (Coordinates	5	Datum		
Northing:	3778309		Northing:	3778620			WGS84		
Easting:	413530		Easting:	414168			WGS84		
Survey Leng		Total Nur	nber of Surv	eys	Tot	al Number	of Survey Hours		
0.7			9				7		
	Least Bell's Vireo Detection Information								
Number of ma	Number of males that were:								
		Paired:	2	Based on obsen (nest-building, f		e, nest, young, o	r nesting behavior		
	Unde	etermined Status:	0	The total number of resident males not confirmed as paired.					
		Transient:	Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.			or were not detected			
	Total	number of males:	2	The sum of the three categories above.					
	Coordin	nates for LBVI Te	rritories (c	ontinue on	second sh	eet if nece	ssary)		
Territory ID		Northing		Easting		Status/Com	nments (e.g. paired)		
1	;	3778307		413549			paired/failed		
2	;	3778597		414080		paired	/unknown outcome		
		Hard Hard Hard Hard Hard Hard Hard Hard							

					(R	eaches 40	26,43a,43b		
	1	Site In	formation						
Project Title: LOS A	andowner: Los Angeles County Soft Bottom Channel Surveys Angeles Dept of Public Works								
	Angeles		- of	Publ	ic	Jork	5		
		Survey	Informatio						
Surveyors: Jim	Pike				Year:	201	3		
Survey Begin Coord	Survey Begin Coordinates			Coordinates		Dati	um		
Northing: 376.	2839	Northing:	37	6789	87	CAN	83		
Easting: 040	1220	Easting:	04	0651	52	((//		
Survey Length (Km)	Total Nun	nber of Surv	eys .	Tot	al Number o	of Survey Ho	urs		
4.34		9 40.5							
Strategic Control	Least Be	ell's Vireo [Detection I	nformation					
Number of males that were	:		_						
	Paired:	6	Based on obser (nest-building, f		, nest, young, or	nesting behavio	r		
Undete	rmined Status:	2	The total numb	er of resident ma	ales not confirm	ed as paired.			
Non-territorial"	Transient:	3	Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.						
Total nur	nber of males:		The sum of the three categories above.						

		Coordinates for LBVI Te	rritories (continue on second s	heet if necessary)
	Territory ID	Northing	Easting	Status/Comments (e.g. paired)
/	LBV1	3764482	0402103	Two nests depradated
3	LBV2	3764665	0402273	Female and Ifledgling
	LBV3	3764811	0402384	Unpaired
/	LBV 4	3767041	0405403	Fledged 4
\	LBV5	3767122	0405626	3 fledglings second nest withez
>	LBV6	3767194	0405700	8 fledglings from 2 nests
	LBV 7	3767363	0406132	Unpaired
	LBV 8	3767732	0406487	Paired

Reach 43a **~**

Reach 40b LEAST BELL'S VIREO SURVEY DATA SUMMARY
(Rewher 71,75,79,80)

			Site In	formation					
Project Title	Lost	Ingeles Cou	enty So	oft Bo	Home	hann	elsurveys		
Landowner	Los	Angeles	Dept	of P	ublic	Wor	el surveys rKs		
		3544 Sept. 1	Survey	nformatio	n				
Surveyors	Ji	mpike				Year:	2013		
Surve	ey Begin Co	ordinates		Survey End (Coordinate	S	Datum		
Northing	: 38	10291	Northing:	380	729	16	NAD 83		
Easting	03	56 08	Easting:	035	5834	19	10 11		
Survey Leng	gth (Km)	Total Nur	nber of Surv	eys	To	tal Number	of Survey Hours		
3.40	0		9			31.	5		
	Least Bell's Vireo Detection Information								
Number of ma	ales that w								
		Paired:		Based on obser (nest-building, t		e, nest, young, o	r nesting behavior		
	Unde	etermined Status:		The total number of resident males not confirmed as paired.					
Non-territorial" Transient:				Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.					
	Total	number of males:		The sum of the	three categorie	es above.			
	Coordin	nates for LBVI Te	rritories (co	ontinue on	second sl	eet if nece	ssary)		
Territory ID	1	Northing		Easting		Status/Con	nments (e.g. paired)		
		***************************************			· · · · · · · · · · · · · · · · · · ·				
		`							
			M				The state of the s		
			<u> </u>						

Site Information

Project Title:	Soft-bottom Channel Reaches 82 and 109								
Landowner:	Los Ange	eles County Depart	ment of Pub	lic Works					
	l		Survey I	nformatio	î)	l			
Surveyors:	Steve Mo	orris, Brian Daniels				Year:	2013		
Surve	Survey Begin Coordinates				Coordinates	5	Datum		
Northing:	3810290		Northing:	3810815			WGS84		
Easting:	356404		Easting:	355493			WGS84		
Survey Leng	th (Km)	Total Nun	nber of Surv	eys	Tot	al Number	of Survey Hours		
1.1			9			15	5.5		
		Least Bo	ell's Vireo [Detection I	nformatio	n			
Number of ma	les that w	ere:							
		Paired:	0	Based on obser (nest-building, f		e, nest, young, o	r nesting behavior		
	Unde	etermined Status:	0	The total number of resident males not confirmed as paired.					
Transient:			0	Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.					
	Total	number of males:	O The sum of the three categories above.						
	Coordin	nates for LBVI Te	rritories (co	ontinue on	second sh	eet if nece	essary)		
Territory ID	l	Northing		Easting		Status/Com	nments (e.g. paired)		
							unpaired		
			-						
•									
				***************************************			Market and the second s		

				-			
	ı		Site In	iormation			
Project Title:	LA Count	y Department of P	ublic Works	Soft Bottom	Channels,	Reach 87/9	7
Landowner:	LA Count	y Department of P	ublic Works				
			Survey	nformatio	n)		
Surveyors:	Lindsay N	Messett, Amber On	neal Heredia			Year:	2013
Surve	y Begin Co	ordinates		Survey End	Coordinates	i	Datum
Northing:	3812994		Northing:	3812307			NAD83
Easting:	351348		Easting:	351684			NAD83
Survey Leng	Survey Length (Km) Total Number of Survey			eys	Total Number of Survey Hours		
0.80 k	0.80 km			8		1:	3.6
		Least Bo	ell's Vireo 🛭	Detection I	nformatio	n	
Number of ma	les that w	ere:					
		Paired:	Based on observation of female, nest, young, or no (nest-building, food carrying).			or nesting behavior	
	Und	etermined Status:	0	The total numb	er of resident m	nales not confirm	ned as paired.
		Transient:	0	I -	once despite rep ation for more t	· ·	or were not detected
	Total	number of males:	0	The sum of the	three categorie	s above.	
	Coordin	nates for LBVI Te	rritories (co	ontinue on	second sh	eet if nece	essary)
Territory ID	-	Northing		Easting		Status/Con	nments (e.g. paired)

Territory ID	Northing	Easting	Status/Comments (e.g. paired)		
	Managa Makarat Innocessaria a sana a san		•		

Site Information

Project fille:	Sοπ-ροπο	om Channel Reach	1 103					
Landowner:	Los Ange	eles County Depart	ment of Pub	lic Works				
			Survey I	nformatio	n			
Surveyors:	Steve Mo	orris, Brian Daniels				Year:	2013	
Surve	y Begin Co	ordinates	ļ	Survey End	Coordinates		Datum	
Northing:	3810685		Northing:	3810426			WGS84	
Easting:	358459		Easting:	358161			WGS84	
Survey Leng	th (Km)	Total Nun	nber of Surv	eys	Tot	al Number	of Survey Hours	
0.4			9			5	.4	
		Least Bo	ell's Vireo I	Detection I	nformatio	n		
Number of ma	les that w	ere:						
Paired:			0	Based on obser (nest-building, t		e, nest, young, o	r nesting behavior	
	Und	etermined Status:	0	The total number of resident males not confirmed as paired.				
		Transient:	0	1 '	once despite rep ation for more t	•	or were not detected	
	Total	number of males:	0	The sum of the	three categorie	s above.		
	Coordin	nates for LBVI Te	rritories (c	ontinue on	second sh	eet if nece	essary)	
Territory ID		Northing		Easting		Status/Con	nments (e.g. paired)	
							unpaired	
			•					

,								

			Site In	ormation			
Project Title:	LA Count	y Department of P	ublic Works	Soft Bottom	Channels,	Reach 104	
Landowner:	LA Count	y Department of P	ublic Works				
			Survey I	nformatio	n)		
Surveyors:	Lindsay M	lessett, Amber On	eal Heredia			Year:	2013
Surve	rey Begin Coordinates			Survey End (Coordinates		Datum
Northing:	3812915		Northing:	3812352			NAD83
Easting:	351547		Easting:	351791			NAD83
Survey Leng	th (Km)	Km) Total Number of Surve			Tot	al Number	of Survey Hours
0.52 k	m		8	8.0			.0
		Least Bo	ell's Vireo E	etection l	nformatio	1)	
Number of ma	les that we	ere:					
		Paired:	0	Based on observation of female, nest, young, or nesting behavior (nest-building, food carrying).			r nesting behavior
	Unde	etermined Status:	0	The total numb	er of resident m	ales not confirm	ned as paired.
		Transient:	0	Only detected of at the same loc		• •	or were not detected
Total number of males: 0				The sum of the three categories above.			
Coordinates for LBVI Territories (continue on second sheet if necessary)							
Territory ID	1	Northing		Easting		Status/Com	nments (e.g. paired)

Coordinates for LBVI Territories (continue on second sheet if necessary)									
Territory ID	Northing	Easting	Status/Comments (e.g. paired)						

			Site In	formation			
Project Title:	Soft-botto	om Channel Reach	า 105				
Landowner:	Los Ange	eles County Depart	tment of Pub	lic Works			
			Survey	nformatio	ā)		
Surveyors:	Steve Morris, Brian Daniels Year					Year:	2013
Surve	Survey Begin Coordinates			Survey End	Coordinates		Datum
Northing:	3812709		Northing:	3812286			WGS84
Easting:	356915		Easting:	356841			· WGS84
Survey Length (Km) Total Number of Survey				eys	Tot	al Number	of Survey Hours
0.4			9	5.6			
		Least Be	ell's Vireo 🛭	Detection li	nformation		
Number of ma	les that we	ere:					
		Paired:	0	Based on observation of female, nest, young, or nesting behavior (nest-building, food carrying).			r nesting behavior
	Unde	etermined Status:	0	The total number of resident males not confirmed as paired.			ed as paired.
	Transient: 0				Only detected once despite repeated surveys, or were not detected at the same location for more than 2 weeks.		
	Total number of males: 0 The sum of the three categories above.						
	Coordin	ates for LBVI Te	rritories (co	ontinue on	second sho	eet if nece	ssary)

	Coordinates for LBVI Te	erritories (continue on second sh	eet if necessary)
Territory ID	Northing	Easting	Status/Comments (e.g. paired)
			unpaired

	1		Site Inf	formation									
Project Title:	LA County	y Department of Po	ublic Works	Soft Bottom	Channels, I	Reach 106							
Landowner:	LA Count	y Department of Po	ublic Works										
			Survey I	nformation	i)								
Surveyors:	Lindsay M	lessett, Amber On	eal Heredia			Year:	2013						
Surve	y Begin Coo	ordinates	S	Survey End (Coordinates		Datum						
Northing:	3817198		Northing:	3816785			NAD83						
Easting:	351666		Easting:	351781			NAD83						
Survey Leng	th (Km)	Total Num	nber of Surv	eys	Tot	al Number	of Survey Hours						
0.43 k	m	Survey Length (Km) Total Number of Surveys Total Number of											
5. 10 K	.4												
5. 10 K	111	Least Be	8 ell's Vireo D	etection lr	nformation		.4						
Number of ma				Detection In	nformation		3.4						
			ell's Vireo D	· · · · · · · · · · · · · · · · · · ·	vation of female)	r nesting behavior						
	les that we	ere:	o	Based on observ	vation of female lood carrying).	nest, young, o	or nesting behavior						
	les that we	ere: Paired:	O O	Based on observ (nest-building, f The total numbo	vation of female ood carrying). er of resident m ince despite rep	e, nest, young, o ales not confirn eated surveys, o	or nesting behavior						
	lles that we	ere: Paired: etermined Status:	O O O	Based on observ (nest-building, f The total numbo Only detected o	vation of female food carrying). er of resident m once despite rep ation for more ti	ales not confirn eated surveys, o	or nesting behavior ned as paired.						
	lles that we Unde	Paired: Paired: etermined Status: Transient:	O O O	Based on observence (nest-building, for the total number only detected of the same local trick same for the sum of the sum of the sum of the same same local trick sum of the same same same same same same same sam	vation of female ood carrying). er of resident monce despite repation for more the three categories	ales not confirn eated surveys, o han 2 weeks.	or nesting behavior ned as paired. or were not detected						
	Unde Total r	Paired: Paired: etermined Status: Transient: number of males:	O O O	Based on observence (nest-building, for the total number only detected of the same local trick same for the sum of the sum of the sum of the same same local trick sum of the same same same same same same same sam	vation of female ood carrying). er of resident monce despite repation for more the three categories.	ales not confirm eated surveys, ohan 2 weeks.	or nesting behavior ned as paired. or were not detected						

	Coordinates for LBVI Te	rritories (continue on second sh	eet if necessary)
Territory ID	Northing	Easting	Status/Comments (e.g. paired)
•			
	,		

			Site In	formation			
Project Title:	Soft-botto	m Channel Reach	110				
Landowner:	Los Ange	les County Depart	ment of Pub	lic Works			
			Survey I	nformatio	n		
Surveyors:	Steve Mo	rris, Brian Daniels				Year:	2013
Surve	/ Begin Co	ordinates	(Survey End (Coordinates	5	Datum
Northing:	3813766		Northing:	3812746			WGS84
Easting:	349511		Easting:	350785			WGS84
Survey Leng	th (Km)	Total Nur	mber of Surv	eys	Tot	al Number	of Survey Hours
1.75			9			7	7.1
		Least B	ell's Vireo 🛭	Detection I	nformatio	n)	
Number of ma	les that w	ere:					
		Paired:	О	Based on obser (nest-building, t		e, nest, young, o	r nesting behavior
	Unde	etermined Status:	0	The total numb	er of resident m	nales not confirm	ned as paired.
		Transient:	0	Only detected of at the same loc			or were not detected
	Total	number of males:	0	The sum of the	three categorie	s above.	
	Coordin	nates for LBVI Te	rritories (co	ontinue on	second sh	eet if nece	essary)
Territory ID		Northing		Easting		Status/Con	nments (e.g. paired)
							unpaired
	,	in the state of th					





E-1 PRE-CLEARANCE TRANSECT DATA



Reach: 1										
Transect Number: 1										
	egetation spe	rcies		Class Cover			Ground Co	ver Material		
		7.5					0.00		;6	
Vegetation Cyperus 5R	. nonnative of	ass Ricinus communis Salix lasiolegis C	Zoez	Native Nonrative	\$o ^{ti}	No Plant	Bate	ROCHICOTORE LEST INTER COSTSE MOOT	Mater Rud	
1		1		1				1		
2		1		1				1		
3		1		1				1		
4	1	1			1			1		
5		1 1			1			1		
6		1 1			1			1		
7		1		1				1		
8		1		1				1		
9		1		1				1		
10		1		1				1		
11	1				1			1		
12		1		1				1		
13		1		1				1		
14		1		1				1		
15	1				1			1		
16	1	1			1			1		
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Reach: 1												
Transect Number: 1												
Vegetation spe	ecies		Class Cover	ſ			Ground Cover Materia	l				
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Totals 7 32	2	65	24	0	41	0	0 0	47	0	12	6	0
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			Summary			Percent:						
				e Class Cove		100						
				native Class		63.07692						
			Total Unve			0						

Describe 2																				
Reach: 2 Transect Number: 1												-								
Transect Number. 1											Class Cover	-	Ground Co	vor Matoria	N.					
											Class Cover	-	Ground Co	ver iviateria	31					
Vegetation kgiun statedens kremisia doustainta subspicata konnaine st	as's Pathenociss	Aracelia cicul	Platanus race	nosa Rubus ursitus	Roiply light	Runet sp. lw	Sprative)	s Sonctius olet	raceus Leconaria cai	peris ^{is}	Native Morraine Both Mortant		b ate	ROCHICOTOR	led littled	coase mooth	deoris water	mud	waternithles	ung sp.
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Reach: 2																
Transect Number: 1																
Transect Number. 1	•									Class Cover		Ground Cover Material				
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										Summary	Percent:					
										Total Native Class Cover	97.64706					
						1				Total Non-native Class Cover	60					
										Total Unvegetated	0					

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Reach: 2										
Transect Number: 2										
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		e olia aticu								
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Vegetation Point Real Point Presidents	inico epho	alba Regium deander normative stass Regium Regium destrutium activischen Sambucus	nexicana reconaria co	rsis	ative,				estlittet coase mooth dealis riud	Na St
ede,	Cardinz bichoce Welloth	alva Reinri deader norrative stass Rathenoissus cum. Rompa nastruium sidenis Sanducus	nexic of	alo,	an his			. 0	. Note .	, emi
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um & amisi	duls iloti	junt nati inent jopa ulasi spuce	OMB.	Typhasp.	hena	Native Workstine Both Noblant		7/0,	leaflitte coase in water third	"of M.
Vegetation Agin Arte	Carc Melli	wer, you bar, bout care care	∠e ^{CU}	44DI.	yer ^U	Haging Arching Both Hobigs	Bare	80CE	lest little closte mater thing	wate
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Reach: 2																			$\overline{}$	
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neole c	diffo	70° 316	a sande	dias	.ssus	ga nasturtium Salix la	ight (ret ^r	80	ره.	7/112			_	.,6	,	2640			Len.
agra ^v nisia ^c	112 04	atus	in ole	adive	eloc,	18/10	siole licus	natio	°26.	rall.		a cative	ant	_	"CODD.	.xet	, MOC		with	•
Vegetation Rounglas Rrenisa	Carduus py	Melilotus	Nerium C	n native Parth	orip	ya nastu. Salikla	sight. Santhucus.	√ ecol.	Mhasp.	verbena Inof		Native Montagine Both	NoPlant	Bare	ROCHLODDIE	leaf litter	parse water	mud	water.	
Vegetation Apium Artemisa C	1 .	1	4 (~	<u>ئ</u>	2,	1		7		6 6 6	1	▼	4	1	, <u>, , , , , , , , , , , , , , , , , , </u>	(
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												Summary Stand Saver	Percent:							
											_	Total Native Class Cover	66.15385							
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												Total Unvegetated	U							

Reach: 2																		
Transect Numb	her: 3					_	_				-							
Transect Name	oci. 5					_	Class Cove	r			-	Ground Co	ı ver Materia	l l				
Vegetation ල්	n native est	ass pathenocisus dinate tur	milia eum Ratanus ta e	emosa nast	Salit Sp. Tecomar	a collecties		aii ^{ye}	&otin	No blant			.0		coatsemood	debris mater	mud	water with Lenna Sp.
vegetation &		V V	1	K.	3° ~°	1	6	7	φ.	1		\\ \rightarrow \\ \r	4.	1	C.	7	6.	7
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Reach: 2													
Transect Number: 3													
				Class Cover			Ground Co	ver Materia	al				
Vegetation nonnative gratine notices	piptatherum miliaceum patarus racemosa poripoa naeturium aduaticum	n Teconaria capensis	<i>\$</i> 5	Native Workstive Both	Noblant		4ste	Rocklobble	_{lea} thter	coarse mooth debris	mud	waterwithle	iug g.
				Total Native Class Cover	50.76923	3							
				Total Non-native Class Cover	29.23077	7							
				Total Unvegetated	5.714286	5							

Reach: 3							
Transect Number: 1			_				
Transcer transcer 1	Class Cover		Ground Cover	Material			
	0.000 00 10.		O. Cana Coto.				
Vegetation Phacelia ramossima pintatherum miliaceum Quercus agrifolia 1 1					coarse mooth debt	ris	water with Lennaso.
ogsin mille stass italia					4 der		enni
iarah siyek sakh	ative	~		obble "er	MOOL		with
Vegetation Phaselia and Sipitatherum miliace non-native grass Quercus agritolia	Mative Mon. native	BOTH MODISTIE	431e 4C	ackloddie leaflitet	ase	ater mud	ater ar
Vegetation 2 ^{NV} 2 ^{NV} 2 ^{NV} 2 ^{NV} 2 ^{NV}			8,9, 6,	, lé ₀	CO. M.	yo Win	710
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Reach: 3																			
Transect N	umber: 1																		
							Class Cov	er				Ground	Cover Materia	al .					
Vegetation 39	Phacella rati	osina Piotatherun	nilia eur	Ne grass	icus agrific	Sira	_{Native}	Wornative	Both	40	Jant	Bate	Racklcobble	leaf litter	coatse moot	udebrie under	mud	nd ter nith	Lemaso.
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							Total Nat	ive Class Co	ver		60								
							Total Nor	n-native Clas	s Cover		32.5								
							Total Unv	egetated			12.5								

Reach: 4												
Transect Number: 1												
		Class Cove	r		Ground Co	ver Materia						
Vegetation Arternisa douglasiana Religius alba non	ative Bass	Native	Worlingtine Both	NO Plant	Bate	ROCHCODIE	ed litter grosthatch und	coarse mode	nater nater	mud	water with le	mrasp.
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Reach: 4													
Transect Number: 1													
Transcer (Variable): 1				Class Cover			Ground Cov	ver Material					
Vegetation Premisa	Jough arans	nelictus alva	non native grass	Mative Monnati	rie Bail.	wo Plant			et This lead tive mithout coat the grass have grass had the grass had the grass had been grass to a	se moody debris	nud	waterwith	Eturg 20.
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				Total Native Class (`over	1.538462							
				Total Non-native C		83.07692							
				Total Unvegetated		16.92308							
				Total Olivegetated		10.32308							

Reach: 4									
Transect Number: 2					-				
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Vegetation 8achais salutolia	ana	dia kangana kangangan kangan kanga					coarse mood	depri	
Salic	jiaine eri	ion edia in edga	· · ·			%e	codi	\	
naits ite	1000	nativ lotus exige laevie	we nativ	alant		ulcobb nitter	ceno	~	se ^{ce}
Vegetation & Virgo	jia incano	dia la	Matine Mon. natine	BOTH NO PIBLE		Bare Rockloddie leaflitter	coars	water	concrete
Vegetation 8achais salcholia				1					1
2				1	-				1
3				1					1
4		1	1						1
5		1	1			1			
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12		1 1	1		-	1			
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16		1 1	_	1	-	1			
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Reach: 4																
Transect Number	er: 2									-						
		I		l		_	Class Cover				Ground Cover Mat	erial				
	_					_								:5		
Vegetation &	if Oli 2	dioincana	٠٨ چې	,		-							coatse mood	depriv		
	salici.	dia incare	idis non native grass	Mellotus alba Salixe	₹.	laeviegita		,Q,				Me	300	4"		
	valis, vi	io, case	ative	votus"	igu ,	Jaeville .	,e	native	lant		ى/	or "iter	e no		,e ^{xe}	
Vegetation 83	ci, Hilse	active	on'i'	Meilotus albo	Salit	`	Mative Mon	native Both	No Plant		pare Rocklick	able leaflitter	COAIS	nater	concrete	
39					9	1	1	· ·		-	1	- 4		1		
40						1	1			-	1					
41						1	1			-	1					
42			1			1	_		1	-	1					
43			1	1		1			1		_		1			
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52	1			1	1				1				1			
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Totals	11	4	1 9	23	24	8	22	16	15 11		22	4 3	34 C	0	4	
i Utais	11	4	1 9	23	24	0	22	10	12 11		22	4 3)4 C	0	4	- 0
										_						
							Summary		Percent:							
							Total Native Cla	ss Cover	57.8125	5						
							Total Non-native		48.4375	_						
							Total Unvegetat		17.1875	_						

Reach: 5														
Transect Number: 1							-							
Transect Number. 1	Vogetation coe	sios	-	Class	Cover		-				Ground Cover M	atorial		
	Vegetation spe	cies	-	CldSS	Cover		-				Ground Cover IVI	ateriai		
		Sairtasiolegis												
	•	sahrasioleois Sahrasioleois	60.											
Reading per foot: Ambrosia psi	chio	W.gr	ith (C								Coarse moody debris		water with Lenna sp.	
	ostati	rti ^U :5 :6	tal.								"yer		amno	0
ر م	155V 285U	, debi, debi		Je.					Sple	<u>م</u>	,0004		in into) X
o do sio	Eucalytus sp. Rorippa nasti	18510 18510		Native Nondative		NO Plant		_	ROCHICOBORE	Leaf Litter	ise n		water with Lenning of Outed ripro	
Reading per foot: Profit.	ency. Bouth	salit salit		Native Nonnati	BOTH	40 X.		Bate	SOCK,	eal	Coal, mate	mud	wate ground	
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4	1	1			1		-			1				
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6	1	1			1							1		
7	1	1	-		1		-				1			
8		1		1			-				1			
9		1	-	1			=				1			
10		1		1			-				1			
11		1		1			_				1			
12		1		1			_				1			
13	1				1		-				1			
14	1				1		-				1			
15		1		1			-					1		
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	1				1	1						1	<u> </u>	1

Reach: 5														
Transect Number: 1														
	Veget	tation species				Class Cover				Groui	nd Cover Ma	aterial		
Reading per foot:	Ambrosia psilostachya	્યું	yr ys saixlasidedis	raith red	Notive	Nonnative Both	Noblant	Bate	Rock/Cobbe	Leaf Litter Coarse wood	ydebris Water	Rud	water with Let	grouted riprap
40			1		1					1				
41			1		1									1
42			1		1									1
43			1		1									1
44			1		1									1
45			1		1					1				
46			1		1									1
47			1		1					1				
48			1		1					1				
49			1		1					1				
50			1		1									1
Totals	6 6	7 14	1 36		37	0 13	0		0 0	29 0	9	5	0	7
					Total Class	Cover:								
					Native	100								
					non-native									
					no vegetat									

Reach: 5								
Transect Number: 2			_					
	getation species		_	Class Cover		Groun	nd Cover Material	
٧٠	getation species			Class Cover		Groun	la cover iviateriai	
		ricun.						
		Typhasp.						
Reading per foot: NIShedia Intana		· Mr. o				ROCHICOODIE Lest Litter Coarse mooth	neter mud netermitale	28.56.
Reading per foot: hirschiedia incana	nina diana diana kojippa nastu	rtic				8	196 / S	groted ribrat
(aldia sala	natile anase	٥٠.		xi ^{ye} x		copple rel mode	nith L	A TIPL
selft alosh	otial sippo	Masi	xive	aning the blatt	.0	the still are	water roud water w	aiteu
Reading per foot:	Hic Bo.	44	Mative	Norrative Both No Plant	Bare	ROCHICODOR Leaflither Coarse mooth	water mid water	\$ CO
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3 1	1			1		1		
4	1			1	1			
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9		1	1			1		
10	1	1		1			1	
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13		1	1				1	
14	1	1		1			1	
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27 28			<u> </u>	1				1
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31 32								1
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39				1				1

Reach: 5																					
Transect Number: 2																					
	Ve	getation spe	ecies	1			Clas	ss Cover	I				I	I	Groui	nd Cover	Materia	I			1
Reading per foot: Hischfeldia i	Walosha lau	nina diana dia	uca Rorippa naci	şturtum aduat	i, curn	Wative	Monnative	e Both	40	lant	Baie	ROCHICO	Jobe Leaf	ited co	atse noot	ydebris water	mud	, i	a ter with L	grouted th	186
40										1											1
41										1											1
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43							1			1											1
44										1											1
45										1											1
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Totals 1	2	2 8	3	8	13	7	7	4	10	29		2	1	3	0		11	5	C) 2	28
						Total Class	Cover:														
						Native			34												
						non-native			28												
						no vegeta	tion		58												
		1					1														
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							1														
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Reach: 5																
Transect Number:	3			_	-											
Transcet Ivaniber.		egetation spe	ecies			Class	Cover				(Ground Cover M	1aterial			
				iiis		0.0.00										
Reading pe	helit non native	grasses Rorrida	salix lasidedis	*terebirthitolius	Wative	Nonrative	₽ŌĬĬ	No plant	Bate	ROCHICODOR	leaflither coasse	woody debris	mud	water with Le	metal detris	
2			1 1		1						1				1	
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12			1	_	1						1					
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14			1	_	1								1			
15		1	1		1		1						1			
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18			1	_	1		1						1	•		
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25			1	1			1				1					
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10013	5	1	. 30	10	10		, 12	U			1/		3	0		
					Total Class	Cover:										
					Native		100									
					non-native	2	40									
					no vegetat		0									

Reach: 5												
Transect Number: 3												
Vegetation species		Class Cov	er					Grour	nd Cover M	aterial		
Reading pe Redera helit non native grasses Saix asidedis Schinus terex	nthikolius Native	Non rative	in Noblant		&se €	ROCHCOODIE	Leaf littled	Coarse moods	uster uster	mud	waterwithle	netal debris
				_								
				_								

Reach: 7						_							
					-								\vdash
Transect Number: 1					-								
Vegetation species							Class Cover		Ground Cover Material				
Reading pe Sacthais salicitolia hitschedia incara Legtochioa uninervia 1 Legtochioa uninervia	peddide's native e	sail exigua	Salik asidedis and size tree	Andrash.		Native	Konnajiye Both Konant		Rafe Roch Copie Leaf Littlet Copie modify deprif	waterwithle	ungouted ith	જ	
			1		-	1					1		
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38 1	1		1			1				1			7
39 1	1		1			1				1			
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43										1			

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Reach: 7																	
Transect Number: 1																	
	Vege	tation spec	cies					Class Cover					Ground Cover M	laterial			
Reading pe 80°Chaifs all this chealing in the second secon	us dunkis denoid	ges nonnative gra	sees saite Helia	sairk lasioleoji	s unid site tree?	Tuhasa.	Wative	Non-rative Both	AND PROPERTY.	&ate	ROCH COPINE Less	Litter Cost	se moody debris	nater nitr le	ung outed the	8	
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Reach: 7																		
Transect Number: 1										_								
Transcer (value). 1	Vegetation sp	ecies						Class Cove	ar					Ground Cover M	aterial			
	vegetation sp	CCICS						Class cove		_				Broaria Cover IVI	accitai			
Reading pe & Chais Salicholia Lischfe dia incara Leptochia University 191	uis Idnigia beholdes Idnigia beholdes	salt-exigue	saintasiolegi ^s	solanum tah	Typhasa.		Wature	MOTING BOT	, wo plant		Base Roy	ACODONE Leaf.	ittet Cooke	woody debris	waterwithle	ungotted its	⁹ 8	
91										1						1		
92										1						1		
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Totals 8 1 3	4	2 6	53	4	13	0	71	1	2	41	0 0	0	10	0 20	13	72	0	
							Total Class											
							Native		.47826									
							non-native		608696									Ţ
							no vegetat	ion 35	.65217									1

Reach: 8															
Transect N	umber: 1														
		Ves	getation sp	ecies				Class	Cover				Ground Cover M	aterial	
					xico										
Reading pe		nedicago pol	PolyEdun	ecies Veronica anal	Washingtonia	abusta							Leaf Littlet Coarse wood	Lebris	
	~	70, 00;	Au.	areil na	ig.	, CO		•				, de	Š	Nater Brotted rips	80
	achilos	3607	anun	,(28)	ingto.			Monnative		ZŽ.		ROCHICODOILE	leat litter Coarse mood	dill	
	Chino	redice	MEO	istori,	135/11		Mative	'OU'UR	BOTH	No blant	Bare	CKIC	af Live of the second	inter courte	
Reading pe	₹°	4,	२०	70	72		42	42	80		80	80	Å C	n, 6,	
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30										1					1
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35										1	ļ				1
36										1					1
37										1					1

Reach: 8														
Transect N	umber: 1													
	Veg	getation species				Class Cover					Groui	nd Cover Materi	ial	
Reading pe	Echinochlos crus galli	Autoritis	anagalis aduatico	Kolousta	Waine	Monnative Both		Mo blant	bate	RocklCobble	led litted	Coarse moody debri	es es	grouted in ran
38								1						1
39								1						1
40								1						1
Totals	4 2	2	4 1		0	9	0	31		0 0	4	0	15	21
					Total Class	Cover:								
					Native		0							
					non-native	2	22.5							
					no vegetati	on 7	77.5							

Reach: 8														
Transect Number: 2								-	-					
Transect Number. 2		Vegetatio	n species						Class Cover	Craw	nd Cover Ma	ntorial		
		vegetatic	ni species					-	Class Cover	Grou	lu cover ivia	ateriai		
Reading pe Charts eragiostis Redicago polynorphia Redicago polynorphia Redicago polynorphia Redicago polynorphia	, allia qualitago qua	a Pohleonum at	enstrum Polygonnum	Polyposor no	gots) onegetienise sonchus aspe	, Veronica ana	Washingtonia	gobuet ^a	Native Normative 80th Normati	Bare Roll(Colibbe Leaf Litter	Coarse moody	dedis	Rud	
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14									1	1				
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16						1			1			1		
17						1			1			1		
18 19						1			1			1		
20						1		-	1			1		
21						1		-	1			1		
22			1			1		-	1			1		
23			1			1		-	1			1		
24						1		-	1			1		
24 25 1 26						1			1			1		
26				1					1	1				
27 1									1				1	
28 1 1									1				1	
29 1 30				4	4				1				1	
30 31	1			1					1 1				1	
32	1			1	1		1		1				1	
33 1	_								1				1	
34	4								1				1	
35 1									1				1	
36 1	1								1				1	
37 1									1	1				
38 1									1	1				
39 1									1	1				
40 1									1	1				
41										1				
42										1				
43 44		1					1							
44									1					

										_			1	
Reach: 8						_								
Transect Number: 2														
	Veg	getation species					Clas	ss Cover				Ground Cover N	aterial	
Reading pe Charts et all ostis	Medicals Dollmorphs Areliates alto Prantago avaita	Juna aenastum	bonbogor up	Apotsi Dorspellereis Sonchus Seper Veronica	, anagalis adudica	arddust ^a	kative konnative	s Bogg M	part	k ^{ate}	ROCH CODDE	Littled Coarse mood	Mater Mater	_{Ku} d
45			•			-	, ,		1	·		1		
46						-			1			1		
47						-			1			1		
48						_			1			1		
49						=			1			1		
50						=			1			1		
Totals 3	0 3 4	0 2	3	2	9 1	= -	1 2	23 0	26	17	0	13 (10	10
							Total Class Cover:							
							Native	2						
							non-native	46						
							no vegetation	52						
						_								

Reach: 9		
Transect Number: 1		
Vegetation species	Class Cover	Ground Cover Material
Reading pe Krainus dipetala mature trees 1 1 1	Mative Morrative Both Morra	nde saydebis
2 1	1 1	
3 1	1	
5 1 1 1	1	
6		1 1 1
7		
8		
9		1 1
10		1 1
11		1
12		1 1
13		1
14		
15		
16		
17		
18		
19		
20		
21 22		1 1
23		
24		
25		
Totals 4 1 1	4 0 0	1 4 3 1 14 1 1
	Total Class Cover:	
	Native 16	
	non-native 0	
	no vegetation 84	

Book 40										
Reach: 10 Transect Number: 1				_						
Transect Number. 1				_	Class Cover		Grou	nd Cover Ma	terial	
			,	_	Class Cover		Grou	114 60 (6) 1144	teriai	
Reading pe kremopis ch	Arternisia douglasiara	Ethnochlos	triestredia interior alto nor not me stats Pomeorin denostruri. Anchos se contra se co	4	ative workative goth workant	Bare Rocklodole Leaflitter	Coatse Mooli	Ndebis Ndebis	rrud	ugter uith aleae
2				_	1	1				
3				_		1				
4					1	1				
5					1					1
6					1	1				
7				_	1					1
8					1					1
9			1	_	1 1					1
11					1					1
12										1
13					1					1
14			1		1					1
15 1			1	_	1					1
16 17			1 1	_	1 1			1		
18			1	_	1			1		
19			1	_	1			1		
20		1	1	_	1			1		
21		1	1		1			1		
22	1	1 1	. 1		1				1	
23 24		1		_	1 1				1	
25		1	1 1	_	1			1	1	
26			1 1	_	1			1		
27	1	1	1 1		1				1	
28 29			1 1		1			1		
					1			1		
30 31			1		1			1		
32					1			1		
33					1			1		
34					1			1		
35					1			1		
36			1		1			1		1
37 38			1		1 1			1		1
39					1			1		
40					1			1		
41					1					1
42					1					1
43					1			1		
44 45				_				1		1
46					1			1		
47					1			1		
48			1		1			1		
49			1		1			1		

Reach: 10																					
Transect Number:	1													-							
Transect Number.	. 1									_		Class Cover		-				Crow	l nd Cover M	atorial	
										_		Class Cover		-				Groui	ilu Cover ivi	ateriai	
Reading pe Menot	bis talkornica Artemsia do	Cherrasa.	Echinochloa	Lite gall	indus alta	Oem Oem	shera elata	gourn aterastruck	Typhasp.		Wative	Norrative 80th	MO Blank		8sie 4	_{JcH} Cobble	atliter	coarse mood	ydebits water	Rud	water with aleae
								1		_		1							1		
51		1		1								1		_					1		
52		1		1				1				1		_			1				
53		1			1							1		_			1				
54	1	-		1									1				1				
55				1	1	1							1				1				
56				1	1							1									1
57					1							1					1				
58				1			1						1				1				
59					1	1							1								1
60					1							1									1
61				1								1					1				
62				1								1					1				
63				1								1					1				
64				1		1							1				1				
65				1								1									1
Totals	1 1	. 5	5	5 12	6	14	2	2	1	9	7	21	9 28		5	0	10	0	28	4	4 14
											Total Class	Cover:									
											Native	24.6	1538								
											non-native	46.1	5385								
											no vegeta	ion 43.0	7692								

December 40										
Reach: 10										
Transect Number: 2						0'	C		C	
	Vegetation	on species				Class	Cover		Ground Cover Materia	
Reading pe Cardus pytriocephalus Convia cara	densis Chenta californica Lingchedda'i	Neilotus alba Polygonum per	sicalia Radhanus sativus Rumet clisqui	Softun halepense	narium	Native Norrative	BOTT NO PLOT	Bate RockICOX	ole Leaflittet Coarse Modi	debis natei
1							1			
2							1	1		
3							1	1		
4	1					1		1		
5	1					1		1		
6	1					1			1	
7	1					1			1	
8	1					1			1	
9	1					1			1	
10	1					1		1		
11							1	1 1		
12							1	1		
13							1	1	1	
14							1	1	1	
15						1			1	
16						1			1	
17				1		1			1	
18				1		1			1	
19			1			1			1	
20			1			1			1	
21 1			4			1			1	
22 1			1			1			1	
23	1		1			1			1	
24 1 25 1						1			1	
						1		-	1	
26 1	1					1 1			1	
28 1	1					1			1	
29 1	1		1			1			1	
30 1		1	<u> </u>	1		1	1		1	
31	1	-		1			1		1	
32	1					1	-		1	
33	1					1			1	
34	1	1				1			1	
35	1			1			1		1	
36	1			1			1		1	
37				1		1			1	
38				1		1			1	
39	1		1	1		1			1	
40	1			1		1			1	
41	1			1		1			1	
42	1 1	1		1			1		1	
43	1			1			1		1	

Reach: 10													
Transect Nun	mber: 2												
			Vegetation	on species				Class Cover			Gr	ound Cover Material	
Reading pe	Cardins pych	Contra canadensis Contra canadensis Contra canadensis	. co		n Dersication Raphanus sati	Rune to isous sorthun halepense tanthun stri	marium		No blant	&ote		cal litter Coasse mooth debris	
44		1				1		1				1	
45		1						1				1	
46	1					1		1				1	
47		1				1		1				1	
48						1		1		_		1	
49						1		1				1	
50						1		1				1	
51						1		1		_		1	
52	1					1		1		_		1	
53 54	1							1				1	
55	1							1				1	
56	1							1		_		1	
57	1							1		_		1	
58	1							1		_		1	
59	1							1	 	_		1	
60	1							1	 			1	
61	1							1				1	
62	1					1		1				1	
63						_		_	1			1	
64	1							1				1	
65						1		1				1	
66	1					1		1				1	
67	1					1		1				1	
68	1							1				1	
69	1					1		1				1	
70	1					1		1				1	
71						1		1			1		
72	1							1				1	
73	1							1				1	
74				1	_			1			_	1	
Totals	27	1 14	1 10	2	2 5	1 16 12		1 58 7	8		9 0	65 0	0
								T + 161 - 6					
								Total Class Cover: Native 10.81081					
								no vegetation 10.81081	-				

Reach: 10													
Transect Number: 3	_												
Vegetation species		Class	Cover					Grou	nd Cover M	aterial			
Reading pe Neilotus alba Polygorum sp.	Mative	ative		MO Plant	Bate	ROCHLOBOR	e Leaflitter		Maedis Marated	mud	waterwithle	gedech nat	
1				1								1	
2				1								1	
3				1								1	
4				1								1	
5				1								1	
6				1								1	
7				1								1	
8				1								1	
9 10	_			1								1	
11 1	_	1		1								1 1	
12 1		1										1	
13 1		1										1	
14 1		1										1	
15 1		1										1	
16				1								1	
17				1								1	
18				1								1	
19				1					1				
20				1							1		
21				1							1		
22 23	-			1							1		
24	-			1 1							1		
25	-			1							1		
26				1							1		
27				1							1		
28				1							1		
29				1							1		
30				1							1		
31				1							1		
32				1							1		
33				1							1		
34				1							1		
35				1							1		
36				1							1		
38				1 1							1 1		
38				1							1		

Reach: 10													
Transect Number:	3				_								
	tation species		Class Cover		_			Gro	ound Cover M	laterial			
Reading pe Neiloti		Matine	War. native Both	ă		\$ate	RacklCabale		odydebris	mud	water with les	geolech nat	
Reading pe 4		4	4			⊘	4 /	Ç C	7	6.	7 1	8	
40				1	_						1		
41				1	_						1		
42					_						1		
43					_						1		
44				1	_						1		
45				1	_						1		
46				1	_						1		
47				1	_						1		
48				1	_						1		
49				1	_						1		
50				1	_						1		
51 52				1	_						1 1		
53			1		L				1	1			
54				1	L					-	1		
55				1	_						1		
56				1	_						1		
57				1							1		
58				1							1		
59				1							1		
60				1	<u>L</u>						1		
61 62	1		1		_							1	
63	1		1 1		_							1	
64	1		1		-							1	
65	1		1									1	
66	1		1									1	
67	1		1									1	
68	1		1									1	
69	1		1									1	
70	1		1									1	
71	1		1									1	
72 73	1		1									1	
73	1		1 1									1 1	
75	1		1									1	
Totals	15 5	0		0 54	1	0	0	0	0 2	2 0	40		
				- 1			Ū	<u> </u>	-				

Reach: 10											
Transect Number: 3											
Vegetation species	Class	Cover				Grou	nd Cover Ma	aterial			
Reading pe Meildtus alba Polygonum sp.	Native Nonnative	80th N	No Plant	Soile Soot	Acopole Leaf Littlet	Coarse moods	water water	nud	water with les	geotech nat	
	Total Class Cover:										
	Native	0									
	non-native	28									
	no vegetation	72									

Reach: 10														
Transect Number: 4														
Transcet Number: 4				Vegetatio	ion species			Class	Cover		Grou	und Cover Material		
				70801411	is in species			- Cruss	0010.		9.00			
Reading pe Cardius py C	Cheinz 20.	Echinochioa C	Lutania oci	dentalis Hirschfeldia i	Mejintre alto connetive grass softmin halepense vernica aras	alis aduatice	Mative	Norvalive	BOH	Mo Start	Bare RocklCobble Leaflither Coarse wo	andedis naternith Lennasa.	ing to the dipter of the second	(30)
1										1			1	
2										1			1	
3										1			1	
4										1			1	
5										1			1	
7										1			1	
8										1			1	
9										1			1	
10										1			1	
11										1			1	
12										1			1	
13										1			1	
14										1			1	
15										1			1	
16										1			1	
17										1			1	
18										1			1	
19										1			1	
20										1			1	
21 22										1			1	
23										1			1	
24 1								1		1			1	
25 1	•	1						1					1	
26 1		1						1					1	
27		1						1					1	
28 29		1						1					1	
29		1						1					1	
30	1	. 1						1					1	
31	1	. 1						1				1		
32	1							1				1		
33	1	-						1				1		
34		1						1				1		
35										1		1		
36 37										1		1		
38										1		1		
39										1		1 1		
40										1		1		
41										1		1		
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43										1		1		
44					1		1					1		
45					1		1					1		
46					1		1					1		
47					1		1					1		
48					1		1					1		
49					1				1			1		-

Danah 10																			
Reach: 10											-								
Transect Number: 4			Voqotati	on species				Class	Cover		-				Crou	ınd Cover Material			
			vegetati	on species				Class	Cover		-				Grou	ind Cover Material			
Reading pe Cardus py	Cherresa.	Lithania d	riightedia	ncara norra	gue gass Tupna Tupna	1	Native Native	Konnative	go th 1	KO SISIT	-	Bale	ROCHCOBBE	Lea Litter	Coatsemood	1	nud nud	ungouted rib	⁽² 83
51						1		-			-					1			
52						1		L			_					1			
53				1		1			1		-			1		1			
54	1			1		1		1	1		-			1					
55 56			1	1		1		1	1					1					
57	1		1	1		1	-	1						1					
58	1			1	1			1			-			1					
59	1				1			1		_	-			1					
60	1				1			1			-			1					
61					1			1			-							1	
62					1			1			-							1	
63	1				1			1			Ī							1	
64					1 1			1										1	
65										1								1	
66			1	L				1			-							1	
67										1								1	
68										1	-							1	
69										1	-							1	
70 71										1	-							1	
72							_			1	-							1	
73							-			1	-							1	
74										1	-							1	
75										1	-							1	
76										1								1	
77										1								1	
78										1								1	
79										1								1	
80										1								1	
81								1		1								1	
82								1		1	-							1	
83								-		1		1							
84								1		1	-	1						1	
85 Totals	4 9	10	1 1	4	1 6	12 0		3 21	4	<u>1</u> 52		2		7		8		L 53	
i Julia i	7	10		4	1 0	12 0		, 21	4		-		. 0	/		0	-	. 35	
							Total Clas	s Cover		_									
							Native	30701.	14.11765		-								
							non-nativ	e	29.41176										
							no vegeta	_	61.17647										
	1		-	1			- U							·		1	1		

Reach: 12													
Transect Number: 1													
	1			Clas	s Cover			1		Ground Cover M	1aterial	1	
										e woody debris		water with le	Š.
2	Medun sp.	وز الله								"geg,			nna,
Reading pe Neilotus alba	Wedning So.	dingil Kasidepis		Monnative	, x			ROCHCODDIE	leatlitter coars	Moody		ithle	grouted ripras
allotu	About "+ Bor	"Hash ahash	Matine	, _{n-nati}	Both MoRant		۰,	H _{CO} .	of little are	z ^z	6.	xel n.	outed
Reading pe 400	sali.	di. Sajitasider Typhasp.	Nac	40,	Both Mobile		Bare	ROL	res Con	water	mud	nge	\$ C
						1							1
2						1							1
3 4			-			<u>1</u> 1							1
5						1							1
6						<u> </u>							1
7						1							1
8						1							1
9						1							1
10	1				1								1
11 12	1				1						1		1
13	1	1		1	1					-	1		
14		1		1		-					1		
15		1 1		1		_					1		
16		1 1		1							1		
17		1 1		1		_				:	1		
18		1		1							1		
19		1		1							1		
20 21		1		1		-					1		
22		1		1							1		
23		1 1		1		_				:	1		
24		1		1						:	1		
25		1		1							1		
26		1		1						:	1		
27		1		1		_					1		
28		1 1	-	1		_					1		
30		1		1							1		
31		1		1		_					1		
32		1		1							1		
33						1					1		
34						1					1		
35						1				:	1		
36						1					-		
37 38						1							
38						1					T		

Reach: 12																	
Transect N									_								
						l l	Class Cover		_			Grou	nd Cover M	aterial			
									=							0.	
				A.								Coarse mood	depur		waterwithle	Mask	
	allo	POHEDININS	Salit Booklin	gii saik asidepis			0				ROCH/Cobble Leaf.Litter	60.	H		, , e	grouted riprof	5
	atus	OUNT.	100di	asiole	°8.		ative	ant			Copp inter	° nos			with	dis	
Danding a	nelilo	COLYPE	alixe	alixic	prasp.	Mative Mont	BOTH	No Plant		Bare	ROCH Coloble Leaf Litter	coarse	, atel	mud	water	courte	
Reading pe	6 6.	Q ³	<u>ک</u> و	<u>ک</u> کر	<u>`</u>	6 6	♦			φ [*]	k	C		4.	7	&	
40								1	4				1				
41					_			1	-				1	•			
42					_			1	-				1	•			
43	_							1	-				1				
44								1	-				1				
45								1	-				1				
46								1					1				
47								1	_				1				
48					1	1			_						1		
49					1	1									1		
50					1	1			_						1		
51					1	1			=						1		
52					1	1			=						1		
53					1	1			_						1		
54					1	1									1		
55					1	1			_						1		
56					1	1			_						1		
57					1	1			_						1		
58					1	1			_					1			
59			1		1	1			_					1			
60			1		1	1			_		1						
61			1	1	1	1			-		1						
62			1		1	1					1						
63 64			1	1	1	1					1						
65			1	 	1	1					1						
66			1		1	1					1						
67			1		1	1			-		1						
68			1		1	1			-		1						
69					1	1					1						
70					1	1			-		1						
71					1	1			-		1						
72						-	1			1							
73							1			1							
74							1			1							
75								1		1							
Totals	3	3	19	10	39	44	6	0 25		4	0 12	0	36	5 2	10	11	

Reach: 12													
Transect Number: 1													
			Class	Cover					Grour	nd Cover Ma	aterial		
Reading pe Weildtus alta Polygonum sp. Salix gooddingii Salix asidlepii	Typiasp.	Ha ^{tiye}	Monnative	&o ⁱⁱ l'	Molisit	8ate	ROCHCODDE	leaf litter	292	uster uster	mud	nater nith let	grouted riprag
		Total Class	Cover:										
		Native		58.66667									
		non-native		8	_								
		no vegetati	on	33.33333									

Dooch, 12										
Reach: 12										
Transect Number: 2										
			Vegetation species		.0;	Class Cover		1		Ground Cover Material
Reading pe Centaure and Cotula Coron	Daturo strar	riischtedia i	Neillette sp. Pohleum species Neillette sp. Pohleum sp. Bound by Salik Booking in Solamin do	Unica dioica	+anthum st	Raive Norhaive Both No Part	Buse	ROCHLOODIE	Leaf Littlet	Coatse mooth debrits Rud Mater mith Lentra 58.
1										1
2			1			1				
3										
4			1							
5			1			1				
6			1			1				
7			1			1				
8			1			1				
9			1			1				
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11			1	1	L	1				
12			1 1			1				
13			1 1			1				1
14			1 1							1
15			1			1				1
16			1			1				1
17			1			1				
18			1 1			1				1
19			1 1			1				1
20			1 1			1				1
21			1 1			1				1
22			1			1			1	
23			1			1			1	
24			1			1			1	
25			1			1			1	
26			1			1			1	
27			1			1			1	
28			1			1			1	
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30			1			1			1	
31			1			1			1	
32 1	L			1	1					
33				-	-					1
34				1	1					1
35						1				1
36				1	1	1				
37		-		1	1	1				
38 39		-	1	1	1	1				1 1
40			1 1			1 1				1
			1	1	1					1
41 42				1	1	1				1
			1			1				
43						1				1 1
45				+	+	1 1		1		
46			1	1	1	1		1		1
				1	1			1		
47				1	1	1		1		
48				1	1	1		1		
49		-		1	1	1				
50						1				
51									1	
52						1			1	
53				1	1	1			1	
54		1				1			1	

	ı								
Reach: 12									
Transect Number: 2									
			Vegetation species		.0.	Class Cover			Ground Cover Material
55	Datura strant	hirschedia i	Neilotus sp. norrative grass Roigha asturium adul salarum dou	Unicalidica sec	P. holose Yanthum stumari	Mative Morrotive Both Mortant	safe socilicia	Jed Litter	Caste woods debits Rud water with entroise, and gouted ripted
56			1			1			1
57			1			1			1
58			1			1			1
59			1			1			1
60			1 1			1			
61						1		1	
62			1		-	1		1	
63			1 1			1		_	1
64					-	1			1
65			1		-	1			1
66						1			1
67						1			1
68			1			1			1
69			1			1			1
70			1			1			1
71			1			1			1
72			1			1			1
73			1			1			1
74			1			1			1
75			1			1			1
76			1			1			1
77			1 1			1			1
78			1 1			1			1
79			1 1			1			
80			1 1 1			1			1
81			1 1						
82			1 1						
83			1 1 1						
84 85			1 1			1			
86			1			1			1
87			1						1
88									1
89			1			1			1
90			1			1			1
91			1 1			1			1
92			1			1			1
93			1 1			1			1
94		1	1			1		1	
95			1			1		1	
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98			1 1			1		1	
99			1			1		1	
100			1			1		1	
101			1 1					1	
102					1	1		1	
103					1	1		1	
104					1	1		1	
105			1			1	1		
106			1				1		
107 108						1	-		
100						1	1		

Reach: 12																
Transect Number: 2																
		Vegetation	n species					Class Cover					Ground Cover M	aterial		·
Reading pe Centautea meliter	delis cototototototo da ura stranonium	dia indra heliotus st.	bolykeunu zu.	asturium adulu Saint goddungii	Julia didia sep hadose	marium	Raille Rott	ligitive Both	No Agant	4ste 4c	t.HCobole	litter Coare	e woody debits	mud	water with Lethica	dred righted
109	1						1			1						
110									1	1						
Totals	1	9	15	85	1		70	14	21 5	6	5	25	0 25	9	29	11
							Total Class Cove	r:								
							Native	82.72	727							
							non-native	31.81	818							
							no vegetation	4.545	455							

Reach: 13												
Transect Number: 1				_								
	getation species	Class Cover		_			Groui	⊥ nd Cover M	aterial			
	ی.د			_							0:	
	*enst						Coarse wood	debris		waterwithle	. 103.5K	
The state of the s	Mellotus sp. nonnative grass					, se	8	40			agouted intro	9
ines.	ative ative	a ative	ant			Copp. Atel	o MOC			with	dip	
Parties centae	neillo on the	Native Non-vative Both	Mo Blant		Bale	ROCH/CODDIE Leaf-litter	coarse	, atel	mud	, atel	colite	
Reading pe Centaurea mu	4. 4.		4	_	Ø _e	KG (C	G	7	4.	7	⋄	
2	1			_		1						
3	1	1		_		1						
3	1	1		_		1	•					
5	1	1	1	_	1		•					
6	1	1		_		1						
7	1		1	-	1							
8			1	-	1							
9	1	1	_	_		1						
10	1	1		_		1						
11	1	1		_		1						
12	1	1		_		1						
13	1	1		_		1						
14	1	1		=		1						
15 1	. 1	1				1						
16 1		1		=		1						
17 1		1		_		1						
18 1	. 1	1				1						
19	1	1		_		1						
20 1		1		_		1						
21 1		1		_		1	_					
22 1		1		_		1						
23 1		1				1						
24 1		1				1						
25 1		1				1						
26	1	1		-		1						
27	1	1		-		1	†					
28		1				1						
29	1	1		-		1						
30	1	1		-		1						
31 32	1	1				1						
33	1	1				1						
34	1	1				1						
35	1	1			1		•					
36	1	1			<u> </u>	1						
37	1	1				1						
38	1	1				1						
	-		1								1	

Reach: 13														
Transect No	umber: 1													
	Vegetation spe			Class	Cover			·		Groui	nd Cover Ma	aterial		
Reading pe	Centaurea melitensis	non-native grass	Native 6	yon native	80th	40 Plant	₽8 ⁴ e	Rock(Copple	Lea Litter	coarse moods	debis water	mid	nater nith l	grouted riprad
39		1		1					1					
40		1		1					1					
Totals	10 4	27	0	37	0	3		4 0	36	0	0		0 0	0
			Total Class Co	over:										
			Native		0									
			non-native		92.5									
			no vegetation	n	7.5									

Reach: 13															
Transect Number: 2															
	Vegetation spe	ecies			Class	Cover				1		Ground Cover N		Ш	
Reading pe Artemisia californica Centauté	vegetation spe	n squamative et as s	ikana	Majiye	Monnative	BOTH	No Start		43te	RocklCobble	leaf litter coat	water water	mud	water nith le	grouted riprap
1		1			1						1				
2	1			1							1				
3	1			1				-			1				
5	1		-	1				-			1				
6	1		-	<u>1</u>				-			1				
7	1			1							1				
8	_	1			1						1				
9	1	1				1	L				1				
10	1			1							1				
11	1			1							1				
12		1			1			-			1				
13		1 1	-		1				1		1				
15		1	-		1				1	•					
16							1	-	1						
17							1	-			1				
18		1 1				1	L				1				
19	1	1 1				1	L				1				
20		1			1						1				
21 22		1	-		1						1				
23		1	-		1			-			1				
24		1	-		1			-			1				
25		_					1		1						
26		1			1						1				
27 1		1				1	L				1				
28	1	1				1	L				1				
29	1			1							1				
30	1		-	1 1				-			1				
32	1		-	<u>1</u>							1				
33 1	1			1							1				
34 1				1							1				
35 1				1							1				
36 1				1							1				
37 1				1							1				
38 1				1							1				

Reach: 13																	
Transect N	umber: 2				-												
		Vegetatio	on species				Class Cover					Grour	nd Cover M	aterial			
Reading pe	Artemisia calif	ornica centaurea melitensis	ospatum squamai	ve grass	ikana	Mative Mc	nrative 80th	No blant	\$a ^t e	ROCHCOOK	Je Leaflittet	Coarse moody	debis uster	mud	water with le	gouted ipra	8
39	1					1					1						
40					-			1		1	1						
Totals	8	1	14	17 2		19	12 5	4		5	0 36	0	0	0	0	0	
						Total Class Cov	er:										
					-	Native	60)									
						non-native	42.5										
						no vegetation	10										

Reach: 13			
Transect Number: 3			
Vegetation species		Class Cover	Ground Cover Material
Reading pe Cardius parnocephalus non-native grass non-native grass 1	Typia sp. Mative	Worknative Both Worlant	Rate Rock Copple real ritter Coarse mooth debits unater that Resoluted introp
1 1		1	
2 1		1	
3 1		1	
5	_	1 1	
6 1		1	
7 1		1	
8 1		1	
9 1		1	
10		1	
11		1	
12		1	
13 1		1	
14 1		1	
15		1	
16 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	1	
18 1	1	1	
19 1	1	1	
20 1	1	1	
21 1	1	1	
22 1	1	1	
23 1	1	1	
24 1		1	
25 1		1	
26 1		1	
27 1 28 1		1	
28 1 29 1		1 1	
30 1		1	
31 1		1	
32 1		1	
33 1		1	
34 1		1	1
35 1		1	
36 1 1		1	
37 1		1	
38 1		1	

Reach: 13											
Transect Number: 3											
Vegetation species		Class Cover					Grour	nd Cover Ma	aterial		
Reading pe Carduus pycnocephalus nonnative grass sanducus nexicana sp.	Native North	, ative Both	No blant	Bate	ROCHCODDIE	leat litter	Coarsemood	dedis water	mud	water with Le	grouted riprap
39 1		1				1					
40			1			1					
Totals 2 7 25 2 7	1	26 7	6	2	1	26	0	1	10	0	0
	Total Class Cover	r:									
	Native	20									
	non-native	82.5									
	no vegetation	15									

Reach: 14												
Transect No	umber: 1											
7. 0.10000 140		etation spe	ecies		Class	Cover		<u> </u>	Groui	nd Cover M	aterial	
					Ciass				Groun	Ta cover ivi	lebis	
Reading pe	Bachais salic	Kolie Salix Booddin	gii Salix lasioledis	Hajive	Monnative	Both	No blant	Bare Rocky Colobbe	Leaf Litter	coarsemood	noter	mud
1			1	1				1				
2			1	1				1				
3			1	1					1			
4			1	1					1			
5 6			1 1	1				1	1			
7			1	1				1				
8			1	1								1
9			1	1								1
10			1	1							1	
11 12		1	1 1	1 1								1 1
13		1		1								1
14		1		1								1
15		1		1							1	
16		1		1								1
17		1		1								1
18		1		1				1				
19		1		1				1				
20		1		1				1				
21		1		1				1				
22		1		1				1				
23 24		1		1				1				
25		1 1		1 1				1				
26		1		1				1				
27		1		1				1				
28		1		1				1				
29		1		1				1				
30		1		1				1				
31		1		1					1			
32		1		1					1			
33		1		1					1			
34		1		1					1			
35	5	1 24		35	0	0	0	16 1	1 8		2	8
Totals	5	24	13	35	U	U	U	16 1	8	U	2	0
				Total Class	Cover:							

Reach: 14															
Transect No	umber: 1														
	Veg	getation spe	ecies			Class	Cover			_	Grour	nd Cover Ma	aterial		
Reading pe	&achais sali					Monnative	BOAL	Motivat	Bate	ROCHICODOR	leaf litted	Coaise mooth	dedis uster	mud	
					Native		100								
					non-native		0								
					no vegetati	ion	0								

Temper Number 2 Vegetation species	Reach: 14													
Class Cover Class Cover Cover Material Cover Ma					_									
Securing pro Control Research Control Re	Transcet Namber: 2	Vegeta	ation species			Class	Cover				Ground Co	⊥ ver Materia		
A	ay C			ses nen asturi	inn advaticum					20/8				
A	Reading pe Carduis V	Histophelic Mellotus M	Indus Ronnative	Pohlouni Boubby un	Nativ	e Won-nativ	BOTH NO	y ant	431e	ROCKICODI	legitite, coase inc	water	mud	concrete
2	1	1							1	-				
A	2	1				1	-				1			
S	3	1				1			1	-				
6 1	4		1			1	-				1			
77 1 8 1 9 1 10 1 11 1 11 1 12 1 13 1 14 1 15 1 16 1 17 1 18 1 19 1 20 1 11 1 12 1 23 1 24 1 27 1 28 1 29 1 30 1 33 1 34 1 33 1 34 1 35 1 36 1 37 1	5 1				_			_	_		1			
8 1	6 1	·			_	1	-	_	1	-				
9	7					-	-				1			
10		1			_			_			1			
11		1			_						1			
112 1		1			_		-	_	_		1			
13 1		1		1	_	1	-	_			1			
14 1						1	-			-			1	
115				-			-	1	1					
16 17 1														
17 18 1														
18 1													1	
1													1	
1	19			1		1	_						1	
22 1	20		1			1						1		
1		1		1		1	-					1		
24 1		1				1	-				1			
1								1			1			
26 1 27 1 28 1 29 1 30 1 31 1 32 1 33 1 34 1 35 1 36 1 37 1											1			
27 1 </td <td></td> <td>1</td> <td></td> <td></td> <td></td>											1			
28 1 </td <td></td> <td>1</td> <td></td> <td></td> <td></td>											1			
29 1 </td <td></td> <td>1</td> <td></td> <td></td> <td></td>											1			
30 1 </td <td></td> <td>1</td> <td></td> <td></td> <td></td>											1			
31 1 </td <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		1					-	1						
32 1 </td <td></td> <td>1</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		1				1		1						
33 1 1 1 1 1 34 1 1 1 1 1 35 1 1 1 1 1 36 1 1 1 1 1 37 1 1 1 1 1										-	1			
34 1 1 1 1 35 1 1 1 1 36 1 1 1 1 37 1 1 1 1		-					-	1		1	_			
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36 1 37 1								1			1			
37 1 1 1								1	1					
										+				
	38							1						
39 1 1 1											1			

Reach: 14													
Transect Number: 2													
	Vegetation species			Class	Cover					Ground Cover Mat	erial		
Reading pe Carduis pychocephalus Viischfeldia is		eorippa nastu	ntium aduaticus	Mative Monnative		Al Plant	&de &	ROCKICODOR		wdebis		concrete	
40					-	1			1				
41						1		1					
42						1		1					
43						1		1					
44						1		1					
45						1							1
Totals 2 11	7 1	0		1 24	0	20		17 1	. 20	0	2	4	1
				Total Class Cover:			-						
				Native	2.22222								
				non-native	53.33333								
				no vegetation	44.4444								
							L						

Reach: 15																
Transect Number: 1																
	Ve	getation spe	cies		Class	Cover						Groui	nd Cover M	laterial		
																٠٥.
	Leptochload	lineriis ded	aides 55									Coarse mood	debri		waterwithle	masi
.0.	3	ned sed	oides Typhasp.		.e					ROCKICOBILE		000	4		200	,,
,1554	achilos	igia	native asp.	æ	ative		Jant			ICOPE	litter	cenic	٠.		with	,e ^{ce}
Reading ne Cype"	Legio	Indu.	Now Japas S.	Wative	Nonnative	Both	Mo blant		Bare	80C/F1	leaf litter	Coars	mate.	mud	"Mate.	concrete
Reading pe Cyperus Sp.	V			`		·	1		_		<u> </u>			•		1
2							1									1
3							1									1
4							1									1
5							1									1
6							1									1
7							1									1
8							1	-								1
9							1	-								1
10							1	-								1
11							1									1
12							1									1
13							1		-							1
14 15							1									1
16							1	-								1
17							1	-								1
18							1									1
19							1									1
20							1									1
21							1						1	L		
22			1		1								1	L		
23			1		1								1	L		
24		1	1			1							1	l		
25		1		1									1	L		
26	1	1				1							1	L		
27		1		1									1	L		
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31 1		1				1							1	L		
32 1 33 1		1			1	1				1				L		
34	L	1	1 1		1	1			-	1		+	1	1		
35		1				1						1	1	1		
36 1	1	1				1							1	<u>-</u>		
37 1		1				1							1	- [
38	-	1		1		-							1	L		
		_								1	1			-		

Reach: 15															
Transect Number: 1				-											
Transcet Namber: 1	Ve	⊥ getation spe	pries	-		Class	Cover					Ground Cover Mate	erial		
	V C,	2		-		Ciass	Cover					Ground Cover Made	Citai		
	Leptochloau	Ludwiela ped	.des									Leaf Litter Coatse mooth debits		waternithLes	No SX
	્ડ	ciri ed	non-native grass								\e	2940		le le	igi.
,55 ^Q .	Hos	diape	ative sp.			ative		z _C X			'Copp.	ixter supplemental		with	xe
- " alperu	optol.	duis	non native Typiasa.		Mative	Monnative	BOTT	NO Plant		Bare	ROCHCOBble	leatlited Coatse mooth	mud	, ater	concrete
Reading pe Cyperus sp. 39	Ve.	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	V ₂ //.	-			Ø.	4,	-	φ,	Ke	\$ C 1 (4,	11.	8
		1		-	1										
40 41		1	1	-	1 1				-			1			
42			1	-	1							1			
43			1	-	1							1			
44			1	-	1							1			
45		1		· -	1							1			
46		1			1							1			
47		1			1							1			
48		1		-	1							1			
49		1	1	-	1							1			
50		1		-	1				- -			1			
51		1			1							1			
52		1		. <u>-</u>	1							1			
53		1			1							1			
54		1			1							1			
55		1		· -	1							1			
56		1			1							1			
57		1			1							1			-
58		1			1				-			1			
59 60		1			1							1			
				-	1										
61 62		1 1			1 1										
63		1		· -	1							1			
64		1		<u> </u>	1							1			
65		1			1										
66		1			1										1
67				·				1							1
68				-				1							1
69								1							1
70								1							1
71								1							1
72								1							1
73								1							1
74								1							1
75								1							1
76								1							1

Reach: 15				
Transect Number: 1		_		
Vegetation species	Class Cover		Ground Cover Material	
	Sidss cover			2.
Reading pe Cyperus sp. Legtochloa uninervia nonnative grass Typha sp.	Mative Morriative Both Mobiant	Bare Rock Leaf Litter	Coatse moody debris	water with Lemna sp.
77		1		1
78		1		1
79		1		1
80		1		1
81		1		1
82		1		1
83		1		1
84		1		1
85		1		1
Totals 6 1 39 8 8	32 3 10 4	0 1	0 0 44	0 0 40
	Total Class Cover:			
	Native 49.41176			
	non-native 15.29412			
	no vegetation 47.05882			

Reach: 15													
Transect Number: 2					-								
	getation species		Class Cover		-			Grou	⊥ nd Cover M	aterial			
	,				-				:6			0.	
	.5								depuls			nask	
3/07	d						e	Š	40			in.	
auso	ative 50.		ative	, ont			"Coppy, "Italy	° nor			with	exe.	
Danding of Relift	nonnative grass	Mative	Nouragine Both	NO Plant		Bare	Rock(Oddie Leaflitter	Coarse mood	, later	mud	waterwithle	concrete	
Reading pe Nellotus alox	\(\frac{1}{2} \)	4	4 &			A	k 0	U	7	4.	7	1	
2				1	-							1 1	
3				1	-							1	
Δ				1	-							1	
5				1	-							1	
6				1	-							1	
7				1	-							1	=
8				1								1	
9				1	_							1	
10				1	-							1	
11				1	-							1	
12				1	-							1	
13				1								1	
14				1	_							1	
15				1	_							1	
16	1		1						1				
17	1		1		-				1				
18	1		1		-				1				
19				1	-				1				
20				1	-				1				
21	1		1		-				1				
22	1		1		-		1			1			
23	1		1		-					1			
25	1		1 1			-				1			
26	1		1							1			
27 1		-	1				1			1			
28 1			1				_			1			
29	1		1							1			
30	1		1							1			
31	1		1							1			
32	1		1							1			
33	1		1							1			
34	1		1							1			
35	1		1							1			
36	1		1							1			
37	1	:	1							1			
38	1		1							1			

Reach: 15											
Transect Number: 2											
	getation species	Class Cover				Groun	l nd Cover M	⊥ aterial			
٧٥٤	getation species	Ciass Cover				Groun	, a cover ivi			•	
	6-					Coarse mooth	epris		waterwithle	20 20.	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	non-native etass				\e	200	100		\e	Wi	
*15°a,	ative v	ative	~		copp, rel	Ou			nith.	xe	
<i>elilot</i>	uourustine whys 28.	Native Non-native Both	No Plant	Bale	RocklCobble LeafLitter	arse	ater	mud	ater	concrete	
Reading pe Neilotus alb	44.		40	80	\$0 \nathered \range \r	O	<i>M</i> ₀	41.	110	ω,	
39	1	1					1	-			
40	1	1					1				
41	1	1					1				
42	1	1					1	-			
44	1	1					1				
45	1	1						1			
46	1	1						1			
47	1	1						1			
48	1	1						1			
49	1	1						1			
50	1	1					1				
51	1 1	1						1			
52	1	1						1			
53	1	1						1			
54	1	1						1			
55	1 1	1						1			
56	1 1	1						1			
57	1	1						1			
58	1	1					4	1			
59 60	1		1				1				
61	1	1	1				1				
62			1				1				
63			1				1				
64			1				1	-			
65			1				1	-			
66			1							1	
67			1							1	
68			1							1	
69			1							1	
70			1							1	
71			1							1	
72			1							1	
73			1							1	
74			1							1	
75			1							1	
76			1							1	

Reach: 15																
Transect Nu	umber: 2				-											
	Vege	etation spe	ecies				Class	Cover					Groui	nd Cover M	aterial	
Reading pe	Weillothe sips	nonnative et	Typhasi	5.		_{Malive}	Morriative	&oth	Mobilant	Bate	Rocklcobble	Lea Litter	coarse mood	, debris	mud water wit	in Lennasp.
77									1							1
78					-				1							1
79									1							1
80					-				1							1
Totals	2	34		11	-	9	30	3	38		0 2	2 0	0	20	28	0 30
				-	-	Total Class	Cover:									
					-	Native		24								
					-	non-native		66								
						no vegetati	ion	47.5								
					-											

Reach: 16									
Transect N	umber: 1								
	Vegetation species	Class C	`over			Ground Cov	ı Ver Material		
		0.033 0				G. Garia Go.	ler material	٠.۵	
Reading pe	hirschfedia incana	Native Nornative	BOLL	Mo blant	&ate	ROCHICOODIE LESTLITEET	Coaise moods	und et	
_				1		1			
2				1		1			
3				1		1			
4	1	1				1			
5				1		1			
6				1		1			
7				1		1			
8	1	1				1			
9	1	1				1			
10	1	1				1			
11	1	1				1			
12	1	1				1			
13	1	1				1			
14	1	1				1			
15	1	1				1			
16				1		1			
17				1		1			
18				1	1				
19				1	1				
20		1			1				
Totals	1 9	0 10	0	10	3	5 12	0	0	
		Total Class Cover:							
		Native	0						
		non-native	50						
		no vegetation	50						

Reach: 17																	
Transect N	umber: 1																
Veg	getation spec	ies		Class	Cover							Grour	nd Cover Ma	aterial			
													isis				
												, <u>, , , , , , , , , , , , , , , , , , </u>	ger				.0
				.ve					,	ble	ď	,1000	`			igi	9,
		الخن ا	e	anati	~	plant		.0.	, ₁ /C	, 2 ₆	Little	, se n	~e ^t	۸	ge ^{te}	"iseq"	
Reading pe	er foot:	Wath		MOT. Tative	BOTT	Moblant		Bare	ROCHICO	Joble Lea	X	Classe moody	Mate	mud	concrete	glouted rips	
1							1				1						
2							1				1						
3							1				1						
4							1				1						
5							1				1						
6							1				1						
7		_					1				1						
8							1				1						
9		_					1			1							
10							<u>1</u>	-		1	4						
11		_					<u>1</u> 1	-			1						
13		_					<u>1</u> 1	-			1						
14							1				1						
15		_					1	_									L
16							<u> </u>										<u>-</u> L
17							_ 1				1						
18							1				1						
19							1				1						
20							1				1						
21							1				1						
22							1				1						
23							1				1						
24							1				1						
25							1		1							_	
26							1									1	
27							1				1						
28							<u>1</u>	-			1						
29 30							1			1	1						
Totals	0	_	0	0) () 3	1	-	1	3	23	0	0		0	1	2
iotais			U	U	, (ا2 ر			_	3	23	U	U		U	<u> </u>	-
		Tota	Class C	Cover:													
		Nativ		· ·	()											
			native)											
			egetatio	on	100												
<u></u>					I												

Reach: 17 Transect Number: 1											
Vegetation species		Class Cover			l l	Grou	nd Cover M	aterial			
Reading per foot:	Mative	Morrative Both	Mobiant	\$ate	ROCH Leaf Litter	300	Ndeoris Mater	mud	concrete	grouted riprato	

Reach: 18									
Transect Numb	per: 1								
	egetation species	Class Cover				Ground Cover M	laterial		
	And I	Matine Monnatine Both	ă.	Bate	Rock/Cobbe		Ndebi's	şand	
Reading pe	1	4 6	7	φ,	42	1	71	50	
1	1	1				1			
3	1	1 1				_			
4	1	1		_		1			
5	1	1	1	_		1		1	
6			1					1	
7			1					1	
8			1					1	
9	1	1				1			
10	1	1				1			
11	1	1				1			
12	1	1				1			
13	1	1				1			
14	1	1				1			
15	1	1				1			
16	1	1				1			
17	1	1				1			
18	1	1				1			
19			1			1			
20			1			1			
Totals	13 1	0 14	0 6	(0 0	16 0	0	4	
		Total Class Cover:							
		Native	0						
		non-native	70						
		no vegetation	30						

Reach: 18															
Transect N															
Vac	getation specie	es		Cla	ss Cover						Ground	l Cover Ma	aterial	1	
Reading pe	Graphalium call	ornicum	Native	Monriality			Mo blant		Bate	ROCKICOODI		woodh		sand	
1							1	-						1	L
							1	-						1	1
3							1	_						1	
4							1	_						1	
5				4			1	-						1	L .
7				1			1	-			1				
8							1	_			1			1	L .
9							1	_			1				
10		-					1	_			1				
11							1	_			1				
12							1	_						1	
13	3						1	-						1	1
14							1				1				
15							1	_						1	1
16							1	-						1	
17							1	-			1				
18							1	-			1				
19							1	-			1				
20 Totals	1			1	0	0	1 19			0	1 10	0) 10	
IULAIS	1			1	J	U	19	-		0	0 10	U	(10	,
			Total Clas	s Cover:											
			Native			5									
			non-nativ	re		0									
			no vegeta			95									

Reach: 19							
Transect Nur	mber: 1						
	Vegetation species	Class	Cover		Ground Cov	ver Material	
	Malosma laurinia Pinus canarensis	ative	Both Modiant	83 ⁵ e	Rock Colobe Leaf Litter	Coarse mooth debrie	1
2				1	1		1
3				1	1		
4				1	1		
5				1	1		
6				1	1		
7				1	1		
8				1	1		
9					1		
10				1	1		
11		_		1	1		
12 13				1 1	1		
14		_		1	1		
15				1	1		1
16				1	1		_
17				1	1		
18				1			1
19				1	1		
20				1	1		
21				1			1
22				1			1
23 24				1	1		1
25				1 1	1 1		
26				1	1		-
27				1	_		1
28				1	1		
29				1			1
30				1	1		
31				1			1
32				1			1
33				1			1
34				1			1
35				1	1		1
36 37				1	1 1		
38				1 1	1		
30				T	1		

Reach: 19											
Transect N	umber: 1										
	Vegetation s	pecies		Class	Cover			Ground Cov	er Material		
Reading pe			Wative	ative		Modificit	Bate	ROCHICODOR Leafuited		dedris	
39						1		1			
40						1		1			
41						1		1			
42						1		1			
43						1				1	
44						1				1	
45						1		1			
46						1				1	
47						1		1			
48						1		1			
49		1		1				1			
50		1		1				1			
51		1		1				1			
52		1		1				1			
53		1			1			1			
54		1	_		1			1			
55 56		1	_		1			1			
57		1	_		1 1			1			
58		1	_		1			1			
59		1			1			1			
60		1			1			1			
61		1			1			1			
62		1			1			1			-
63	1	1			1			1			
64	1	1			1			1			
65	1	1			1			1			
66		1			1			1			
67		1		1				1			
68		1		1				1			
69		1		1				1			
70		1		1				1			
71		1		1				1			
72		1		1				1			
73		1		1				1			
74 75		1		1 1				1			
Totals	14	27	-	0 13		48	0		0	16	
i Utais	14	41		J 13	14	40	0	20 31	U	10	

Reach: 19											
Transect Number: 1											
Vegetation spec	ies		Class	Cover					ver Materia		
Reading pe Malosma aurinia pinus (anatensis	Wative	Morrative	Barn	40 plant	\$ate	ROCHICODOR	Led Littled	coarse mood	debris	
		Total Class	Cover:								
		Native		18.66667							
		non-native		36							
		no vegetat	ion	64							

Reach:													
Transect N	ıımher:							-					
	Vec	getation species				Class Cover					Ground Cov	ver Material	
	Veg	*/),				Class Cover		-					
	atum	amat										,6	
	icula	Salva	.5	.m								Aepu.	
	kasc, ra	in jayon of	, (C	χ ^ν						\@	360	70	
	ourn. Edate	nae' tive t	Win.			ative	×			oble tel	you	×e	
	ingoli didosi	cotia.	artiu.		rive	anino xh	Plal.		ly s,	aflite	a'se	water sand concrete	
Reading pe	the les	nsduk nornative et	355 Spartium junce		Mative	Nourrative Both	Moblant		Bare Bocklo	oble Leaflitter	Coarse mooth	water sand concrete	
1							1			1			
2							1					1	
3							1	-		1			
4							1	-		1			
5							1	-		1			
6							1			_		1	
7							1	-		1			
8							1	-				1	
9							1					1	
10													
							1			1		1	
11							1	-		1			
12							1					1	
13		1								1			
14							1			1			
15							1	-		1			
16							1	-				1	
17							1					1	
18							1					1	
19							1					1	
20							1	-				1	
21							1			1			
22							1	-				1	
23							1	•		1			
24							1			1			
25							1			_		1	
26							1			1		1	
27							1			1			
								-					
28							1	-		1			
29							1	-				1	
30							1	-				1	
31							1					1	
32							1					1	
33							1	-		1			
34							1			1			
35							1			1			
36							1			1			
37							1			1			

Reach:														
Transect Number	er:			-				-						
	Veo	getation species		-		Class Cover		-				Ground Cov	ver Material	
Reading pe & ios	Sonum fasciculatum Lepidospartus	till,		-		0.000 00 10.		-						
	, atum	ana										Coarse moody	; \ \	
	Cicul	Nicotiana alauca	spartium june	oun									96 ₀ ,	
	Jisse Kin	diane di	inc	y.		Q.				Ze		2064	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	anun. Ospai	iana b ative	Janu:			ative	ant			COPL	ities	S. MO.	. exe	
3 11 (10%)	gide	icotile on the	Oaktie		Mative	Wording Both	Mobiant		safe Roy	Alcoppie re	eatlitter	CORISE	water sand concrete	
Reading pe &		4. 40	58	-	4,	4 80			Ør 6c		,	G	7, 30, 0	
38				-			1	_		1				
39							1	_		1				
40				-			1	-					1	
41				-			1	-					1	
42				-			1	-					1	
43							1	-		1				
44							1			1				
45							1			1				
46				-			1			1				
47				-			1	-		1				
48				-			1	-					1	
49							1	_					1	
50							1	_		1				
51							1			1				
52							1	-					1	
53							1	-					1	
54							1	_					1	
55							1	-					1	
56				_			1	_					1	
57							1	_		1				
58							1	_					1	
59							1						1	
60							1						1	
61							1			1				
62							1						1	
63							1			1				
64							1						1	
65							1			1				
66							1						1	
67							1			1				
68							1						1	
69							1						1	
70							1						1	
71							1						1	
72							1						1	
73							1						1	
74							1			1				
	1		1			1								

Reach:							_									
Transect N	ıımher:															
TI GITS CCL IV	<u>'</u>	Vogota	ition species					Class Cover					Ground Co.	ver Material		
		vegeta	inou sheries					Ciass Cuvei					Ground Cov	vei iviateiidi		
Reading pe	Eriogonum fasciculatum	gatum soli	garnatus alauca	ative grass	Spartium junc	eur ⁿ	Wative	Norvative Both	Moriant	Baie	ROCHICODOR	leaf litter	Coarse wood	Juster Market	sand concre	șe ,
75									1						1	
76									1		1					
77									1						1	
78									1						1	
79									1						1	
80									1						1	
81									1						1	
82									1						1	
83									1		1					
84									1		1					
85									1		1					
86									1			1				
87							1					1				
88		1					1					1	-			
89					1			1				1	-			
90		1			1				1			1				
91		1			1				1			1				
92		1			1				1			1	-			
93		1			1				1			1				
Totals	1	5	1	0	5		2	1 0	89	0	39	8	0	0	45	1
							Total Class									
							Native	2.150538								
							non-native									
							no vegetat	ion 95.69892								

Reach: 21										
Transect Number: 1										
Vegetation s	pecies		Class	Cover				Ground Cov	er Material	,
Reading pe Vinca mai ^C	\$	Matine	Mornative	₽ oti''	Notions	¢ate	ROCHLODDE	Leaf Littles	Coarsemoody	debris
1					1					1
2					1			1		
3	_				1			1		
4					1			1		
5					1					1
6					1					1
7					1			1		
8					1					1
9					1					1
10	_				1					1
11	_				1					1
12					1					1
13	_				1					1
14	1		1							1
15	1		1							1
Totals	2	0	2	0	13	0	0	4	0	11
	_		_							
	_	Total Class	Cover:							
	_	Native		0						
	_	non-native		13.33333						
		no vegetati	on	86.66667						
	_									
	_									

Reach:															
Transect Nu	ımber:														
	Veg	etation spe	ecies			Class	Cover			1	Groui	nd Cover M	aterial		
Reading pe	Arternisia dov	gasiana Bacharis sali	cifolia Ricinus confri	unis	Native	ative		WO Plant	8ale	ROCHCODDIE				_{çş} and	
1								1			1				
								1		1					
3	1				1			1			1				
5								1 1			1 1				
6								1		1					
7								1			1				
8		1			1						1				
9	1				1					1					
10	1				1					1				1	
11 12								1 1			1			1	
13								1			1				
14								1			1				
15								1						1	
16								1						1	
17								1						1	
18 19								1 1		1	1				
20								1		1					
21								1		1					
22								1			1				
23								1		1					
24								1						1	
25 26								1		1					
26								1 1		1	1				
28								1		1					
29								1		1					
30								1		1					
31								1						1	
32								1						1	
33 34								1 1			1			1	
35								1		1				1	
36								1			1				
37								1						1	
38								1			1				

Reach:														
Transect N	umber:													
	1	etation spe	cies			Class	Cover				Grour	nd Cover M	aterial	
Reading pe		glasiana Bacharis sali		unis	Mative	Monnative	B OTT	MO Plant	\$3 [€] E	ROCHICODORE	leaf litted	Coarse mood	debris unater	sand
39								1			1			
40								1			1			
41								1			1			
42								1			1			
43								1						1
44								1			1			
45								1						1
46								1						1
47								1						1
48								1						1
49 50								1 1			1			1
51								1			1			
52								1						1
53								1			1			
54			1			1					1			
55								1						1
Totals	3	1	1		4	1	0		() 14	24	0	0	17
					Total Class	Cover:								
					Native		7.272727							
					non-native		1.818182							
					no vegetati	on	90.90909							

Reach: 22											
Transect No	ımher: 2										
Transcet iv	Vegetation spe			Class Cover			Groui	nd Cover M	l aterial		
	vegetation spe			Class Cover			Groun	ia cover ivi	:6		
Reading pe	Gilia angelensis Hedera helit	Nicotiana glauca	Walive	Norvative Both	No Start	&a ^{te}	ROCH Coloble Leaf Littler	coarse mooth	, debris	₅ and	
1	1			1						1	
2	1			1						1	
3					1					1	
4					1					1	
5					1		1				
6					1		1				
7					1					1	
8					1		1				
9					1					1	
10					1		1				
11					1		1				
12					1					1	
13					1					1	
14					1					1	
15 16		_	-		1					1	+
17					1		1			1	
18		1		1			1			1	
19		-			1					1	
20					1					1	
21					1					1	
22					1					1	
23					1		1				
24	1		1							1	
25					1		1				
26					1		1				
27					1		1				
28					1		1				
29					1		1				
30					1		1				
31					1		1				
32					1		1				
33					1		1				
34					1		1				
35 36					1		1				
36					1		1				
38					1		1				
38					1		1				

F			T .												
Reach: 22															
Transect N	umber: 2														
	Veg	getation spe	cies			Class	Cover					nd Cover Ma			
Reading pe	iia angelene	hedera helit	wicdiana dali	ş¢	Wajire	Mornative	Both	Modalit	\$ ³ te	ROCHCODDIE	astlitter	Coarse mooth	debris	sand	
Reading pe	Q,	He	41.		40	40	\$0	40	80	80	Se.	0	40	Sor	
39								1			1				
40								1			1				
41								1			1				
42								1			1				
43								1		1					
44								1			1				
45								1			1				
Totals	1	2	1		1	3	0		(14	14	0	0	17	
					Total Class	Cover:									
					Native		2.22222								
					non-native		6.666667								
					no vegetati		91.11111								
						- :-									

Reach: 22		
Transect Number: 3		
Vegetation species	Class Cover	Ground Cover Material
Reading pe Artemisia doublasiana Platanus racemosa 1		Bare Rock/Cobble Leaflitter Coarse mooth debris sand
Reading pe Artemisia douglasianus ratemosa		, 6egr.
adoute (acen	e	yole of looky
anisie anus.	ive snatt in stant	e Wol Little Gen et
Reading pe	Restive Roth Robert	Bare Rocklobble Leaflitter Coarse mooth de sand
1	1	1
	1	1
3	1	
5	1	
6		
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	
13		
15	1	1
16	1	1
17	1	1
18 1	1	1
19 1	1	1
20 1	1	1
21 1 22 1		
22 1 23 1	1	1
24 1	1	
25 1	1	1
26 1	1	1
27 1	1	1
28 1	1	1
29 1	1	1
30 1	1	
31 1 32 1		1
33 1	1	
34 1	1	1
35 1	1	1
36 1 1	1	1
37 1	1	1
38 1 1	1	

Donch 22															
Reach: 22															
Transect	Number: 3														
	Vegeta	tion spe	cies		Class	Cover				T		nd Cover M			
Reading p	e Artenisiac	Jough aid the	Nustalemosa	Wative	MOn. native	Bath	40 Plant		\$34°E	RocklCopple	Leaf Litter	Coarse mooth	Adedris Nater	sand	
3	9	1	1	1											1
4	0	1	1	1							1				
4	1	1	1	1							1				
4	2	1	1	1							1				
4	3	1	1	1							1				
4	4	1	1	1							1				
4.	5	1	1	1							1				
Totals	2	28	9	28	()	0	17	0	7	16	0	1	0 :	22
			_	Total Class	Cover:			_	_						
				Native		62.222	22								
				non-native			0								
				no vegetati	on	37.777	78								

Total Class Cover Percent Average for 24-1A,B, and C:

Native 20.33 non-native 43.58333 no vegetation 56.41667

Reach: 24										
Transect Number: 1A						_				
	Vegetation species		_	Class Cove	er			Ground Cover Materia	n	
Reading pe Conviationariensis Cyperus 50.		gass Richus Communis Sonchus oleraceus Typhaso		Native Nornative Bot	*		Bare Rock(Coltile	debris		grouted riprato
1	1 1		1		1			1	-	
2	1 1		1		1			1	-	
3	$egin{array}{c cccc} 1 & & & 1 \\ 1 & & & 1 \\ \end{array}$		1		1				-	
5 2	1 1		1		1	_			-	
6	1		_	1	_				1	
7	1			1					1	
8	1		_	1				1		
9	1		_	1		_		1		
10	1			1				1		
12	1			1				1		
13	1			1				1		
14	1		_	1				1		
15 16	1	1	_	1				1		
17	1 1 1	1	_	1		_		1		
18		1	_	1		_		1		
19	1			1			1			
20		1	_	1			1			
21		1	_	1			1			
22 23 1		1	_	1		_	1		1	
24 1		1	_	1				1	1	
25		1	_	1			1			
26		1		1						1
27			_			1				1
28 29		1	-	1		L				1 1
30		1		1			1			1
31	1	1		1						1
32	1	1 1		1				1		
33		1		1				1		
34 35		1 1		1 1				1		
36		1		1				1		
36 37						1		-		1
38					-	1				1
39						1				1
40						1				1
41 42						1				1
43						1				1
44						1				1

Reach: 24																			
Transect Number: 1A											-								
	I.	Vegetatio	n species		l .			Class	Cover					Ground Co	ver Materia	ıl			
Reading pe Convitation?	CIPEUSSP. Meiliousalt			as's Ricinus confirmition	5 anchus deracei	Abyasa.	Wative	ative		Mostaria		43 ^{te}	Rock/Cobble Lest 1		water		*Igh	godied ripras	
45										1								1	
46										1								1	
47										1								1	
48										1								1	
49										1								1	
50										1								1	
51										1								1	
52										1								1	
53										1								1	
54										1								1	
55										1								1	
56										1								1	
57							_			1								1	
58										1								1	
59 60							_			1								1	
61							_			1								1	
62										1								1	
63							_			1								1	
64							_			1								1	
65										1								1	
66										1								1	
67										1								1	
68										1								1	
69										1								1	
70										1								1	
Totals 2	5 13	1	7	1	17	5	0	29	5	36		2	4	17 () 5	2	1	39	
							Total Class	Cover:											
							Native		7.142857										
							non-native	1	48.57143										
							no vegetat	ion	51.42857										
															1				

Reach: 24																
Transect Number: 1B								-								
	egetation spe	ecies			Class	Cover						Ground Cov	ver Materia	1		
													:5			
Reading pe Convia bonariensis	plantago lan	edata Sonchus dera	ceus									Coarse moody	depri			
anarie as	iblo 1su	ie view	۶		æ					sle.		OOGN	\			ioral
1200 11812	, 260 L	conui. huso.		æ	native		agrit			ICOPL	littel	ge mil	٠.			*ed ("
Reading ne Cony	plant	Pohkounus 20.		Native	Monnative	BOTIL	Moblant		Bare	ROCHICODDIE	Lest Litter	Costs	nater	mud	sand	grouted riprato
Reading pe Conviationariensis Didnigia po	1			•	1		`			`	•		1			•
2	1				1								1			
3	1				1								1			
4	1				1								1	-		
5	1				1								1	-		
	1				1								1	-		
	1				1								1	-		
	1				1			-		1						
	1				1								1	-		
	1				1								1	-		
	1				1									1		
	1				1					1				_		
	1 1				1										1	
	1				1										1	
16							1									1
17							1									1
18 1					1											1
19							1									1
20							1									1
21		1			1		1	-								1
22							1									1
23							1 1									1
25							1									1
26							1									1
27							1									1
28							1									1
29							1	-								1
30							1	-								1
31							1									1
32							1									1
33							1									1
34							1	-								1
35 36							1 1	-								1
37							1									1
38							1									1
30																-

Reach: 24	oori 1D															
Transect Numb		/ogotation sn	nosios			Class	Cover					Cround Co	Nor Mataria	.I		
		egetation sp			_	Class	Cover	_				Ground Co	ver Materia	11		
Reading pe Co	nyla bonariensis	pantago la	nceolata	nchus deraceus	Mative	Monnative	&oth .	MoPlant	Bate	ROCHICODORE	Leaf Litter	Coarse moo	wdebris water	Rud	sand	grouted ript an
39								1								1
40								1								1
41								1								1
42								1								1
43								1								1
44								1								1
45								1								1
46								1								1
47								1								1
48								1								1
49								1								1
50								1								1
51								1								1
52								1								1
53					_			1								1
54								1								1
55 56					_			1								1
57					_			1								1
58					_			1								1
59								1								1
60								1								1
Totals	2	15	1 0	1	0	17	0	43	C	2	C) () 10) 1	. 2	45
					Total Class	Cover:										
					Native		0									
					non-native)	28.33333									
					no vegetat		71.66667									

Reach: 24															
Transect Numbe	vr. 1C								-						
Transect Numbe		cn o c	nios.			Class	Cover		-		<u> </u>	tound Co	er Material		
	Vegetation	spec	les			Class	Cover		-		GI	rouna cov	er material		
Reading pe	:des														
	eblo,					•									
	dia pe	₹ <i>S</i> .	Mhasp.			Monnative		, at							
78,	ildn?		"Pus		Mative	Onthe	BOTH	No blant		nater					
Reading pe 💸	50		14,		40	100									
1	1	1	1	+			1	+		1					
2	1	1	1	+			1	_		1					
3	1	1	1	-			1	_		1					
4	1	1	1	+			1	+		1					
5	1	1	1	-			1	_		1					
6	1	1	1	-			1			1					
7	1	1	1	-			1	_		1					
8	1	1	1	-			1	_		1					
9	1	1	1	-			1	_		1					
10	1	1	1	-			1	_		1					
11	1	1	1	+			1	_		1					
12	1	1	1				1	_		1					
13	1	1	1	+			1	_	-	1					
14	1	1	1	-			1		-	1					
15	1	1	1	-			1	_	-	1					
16	1	1	1	-			1		-	1					
17	1	1	1				1		-	1					
18	1	1	1	-			1		-	1					
19	1	1	1	-			1		-	1					
20	1	1	1	+			1		-	1					
21	1	1	1	-			1		-	1					
22	1	1	1	-			1	+	-	1					
23	1	1	1	+			1		-	1					
24	1	1	1	-			1			1					
25	1	1	1				1			1					
26	1	1	1	+			1			1					
27	1	1	1	+			1			1					
28	1	1	1	-			1			1					
29	1	1	1	-			1			1					
30	1	1	1	+			1			1					
31	1	1	1				1			1					
32	1	1	1				1			1					
33	1	1	1	+			1			1					
34	1	1	1	•			1			1					
35	1	1	1	-			1			1					
36	1	1	1	+			1			1					
37	1	1	1	+			1			1					
38	1	1	1				1	-		1					

Reach: 24					
Transect Number: 1C					
Vegetation species		Class Cover		Ground Cover Material	
6					
Joides					
geque o.		.,e			
"iligita" "22.5% "328.	l e	nativ narit	3		
Reading pe Lidnie Reading pe L	Wative Work	taline Both Modant	na ^{et}		
	1	1	1		
40 1 1	1	1	1		
	1	1	1		
	1	1	1		
	1	1	1		
	1	1	1		
	1	1	1		
	1	1	1		
47 1 1	1	1	1		
48 1 1	1	1	1		
49 1 1	1	1	1		
50		1	1		
51		1	1		
52		1	1		
53		1	1		
54		1	1		
55		1	1		
56		1	1		
57		1	1		
58		1	1		
59	_	1	1		
60	_	1	1		
61	_	1	1		
62		1	1		
63 64		1	1		
65		1	1		
66		1	1		
67		1	1		
68		1	1		
69		1	1		
70		1	1		
71		1	1		
72		1	1		
73		1	1		
74		1	1		
75					
75 76		1	1 1		

ransect Number: 1C																
	getation sp	pecies			Class Co	over		_				Ground	d Cover Ma	aterial		
leading pe Vidwigia pe	ploides	Mayaza.	Majiv	٤	ative		Modifica		žet							
leading pe 🍑	- ζ.··	14.	40	40	•	80	40	n								
77							1		1							
78							1		1							
79			_				1		1							
80							1		1							
81							1		1							
82							1		1							
83							1		1							
84							1		1							
85							1		1							
86							1		1							
87							1		1							
88							1		1							
89							1		1							
90 91							1		1							
otals 49) 49	9 49	_	0	0	49	1 42		91	() ()	0	0)	0
Otals 45	4:	9 49		U	U	49	42		91		, ()	U	U	,	U
			Total	Class Cove	er.											
			Nativ			53.84615		-								
				native		53.84615										
				getation		46.15385										
			110 VC	Scration		10.13303										
								-								

Total Class Cover Percent Average for 24-2A,B, and C:

 Native
 6.063333

 non-native
 53.88333

 no vegetation
 40.37

Reach: 24									
Transect Number: 2A				-					
Vogotation enocios			Class Cover	-		Groui	nd Cover Ma	aterial	
Oracium	Raghanus sativus Sonchus olefaceus	Wative	Morriative Both Moriant		&ate			abis	grouted riprop
1	1 1		1	-		1			
2 3 4 5 6 1 7	1 1 1		1 1 1 1 1	- - -		1 1 1 1 1 1			
8 1			1	-		1			
9			1	-		1			
10 1			1	-		1			
11	1		1			1			
12			1			1			
13			1	_		1			
14	1		1	-		1			
15	1		1	-		1			
16 17 1	1		1	-		1			
17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1		1	_		1			
19	1		1	-		1			
20	1		1	-		1			
21	1		1	-		1			
22	1		1	_		1			
23	1		1	-		1			
24	1		1	-	1				
25	1		1	-		1			
26 27	1		1			1			
28 1	1		1			1			
29	1		1			1			
30			1		1	_			
31			1		1				
32			1		1				
33			1	-	1				
34			1	-	1				
35 36			1	-	1				
36 37		_	1 1	-	1				
38			1	-	1				
39 1			1			1			
40 1			1			1			

D 04									
Reach: 24									
Transect Number: 2A									
	Vegetation	on species		Class Cover		Grour	nd Cover Ma	ateriai	
Reading pe Chrysarthes	Convia donariensis non native sta	ass Partago lanceolata Rahianus satinus Sonchus oletaceus Typhassi.	Kalive	Norrative Roth No Plant	83de	ROCHICODDIE LESS LISTES		debris water	Brothed riproo
42	1			1		1			
43	1			1		1			
44	1			1		1			
45	1			1		1			
46	1			1		1			
47				1	1	1			
48				1	1				
49				1	1				
50				1	1				
51		1		1					
52		1		1		1			
53		1		1		1 1			
54		1 1		1		1			
55		1 1		1		1			
56		1		1		1			
57		1		1		1			
58	1	1		1		1			
59	1	1		1		1			
60	1			1		1			
61	1			1		1			
62	1			1		1			
63	1			1		1			
64	1			1		1			
65	1			1		1			
66	1			1					1
67	1			1					1
68	1			1					1
69	1			1					1
70				1					1
71				1					1
72				1					1
73				1					1
74				1					1
75				1					1
76				1					1
77				1					1
78				1					1
79				1					1
80				1					1

Reach: 24																				
Transect N	umber: 2A		\	1-1'						Clara Carr			_					4 - 4 1		
			vege	tation specie	es					Class Cov	er		_			Grou	nd Cover N	nateriai		
Reading pe	Chrysatheri	Conyra bonariensis	dus alba non na	Plantage Plantage	Janceola [*]	ta adhanus satinus	jus oleraceus	·ð.	Wative	Morrative 80	i ho	plant	\$₹	ge ge	ROCH Colobe	Leaf Litter	Coarsemon	united united		goded lipras
81												1								1
82												1								1
83												1								1
84												1								1
85 86												1					1			1
86									-			1								1
88												1					1			1
89												1								1
90												1								1
91												1								1
92												1								1
93												1								1
94												1								1
95												1								1
96												1	_							1
97									_			1								1
98 99												1	_							1
100									_			1	_							1
100												1								1
102												1					1			1
103												1								1
104												1								1
105												1								1
Totals	2	2	15	7	5	2	25	1	0	53	1	51		14	0	51	L	0	0	40
									Total Class		25224									
									Native		952381 .42857									
									non-native no vegetat		.57143									
									no vegetat	40	.5/145									

Reach: 24							
Transect Number: 2B							
	Vegetation species		Class Cover	<u> </u>	Ground Cov	ver Material	
						;%	
Reading pe Conyra bonariensis Cynodon dac	Ludwie a periodes neilotus alba prantago lanceola	a Milius defaceus			ROCH COOKSE MOOD	dept.	
gnarie Hac	er people silva sance	derac	,e		odi	4	iotal
12 don	ilėja k ilotus kalo k	mis	ie nativ		lopy litter sem	٠,	, segui
Reading ne Cont Cyno	rho, Weildras gradion Weildras gray Staufago succou	NC. 73	stive Workstive Both Worlant	Bate	ROCH COOPSE MOOD	water	mud grouted riprate
1			1	_	<u> </u>	1	, ,
2	1		1		1		
3 1	1		1		1		
4 1	1		1		1		
5	1		1		1		
6		1	1		1		
7	1		1		1		
8	1	1	1		1		
9		1	1		1		
10		1	1		1		
11	1		1		1		
12	1		1		1		
13		1	1		1		
15	1		1		1		
16	1	1	1	<u> </u>	1		
17	1	1	1		1		
18	_	1	1		1		
19		1	1		1		
20		1	1		1		
21		1	1		1		
22		1	1		1		
23 1			1		1		
24		1	1		1		
25		1	1		1		
26 1			1				
27		1	1		1		
28 1			1		1		
30					1		
31			1		1		
32			1	1	1		
33	1		1	1			
34	1		1		1		
35	1		1		-		1
36	1		1				1
37			1		1		
38			1				1

Reach: 24											
Transect Number: 2B											
	Vegetat	ion species		Class Cover			<u> </u>	Ground Co	ver Materia	<u> </u>	
,									;\&		
Reading pe Conviation ariensis Cynodon &	sctylor Ludwigia pe	ploides Neillotus alba Piantago lanceolata Sonchus oleraceus						Coarse wood	depl		^
graft di	acti per	ight allog lance delay		e			, de	300.	34		ipral
Tabe adon	wigia.	illatus tako this	. ₁ e	a nativ	olant		Wool Citizer	sen	۸.	λ	"red"
Reading pe Con' Cynu	ligh	ploid Neilletus alba piantago lanceolt Sonchus deracet	Wative	Workstife Both	NoPlant	Bare	Rock/Cobble Leaf-Litter	Cog,	water	mud	Brotted ripted
39					1						1
40					1						1
41					1						1
42					1						1
43					1						1
44 45					1						1
46					1						1
47					1						1
48					1						1
49					1						1
50					1						1
51					1						1
52					1						1
53					1						1
54			_		1						1
55 56			-		1						1
55					1						1
58					1						1
59					1						1
60					1						1
61					1						1
62					1						1
63					1						1
64					1						1
65					1						1
66					1						1
68					1						1
69					1						1
70					1						1
71					1						1
72					1						1
73					1						1
74					1						1
75					1						1
76					1						1

Reach: 24																		
Transect No	ımber: 2B																	
		Vegetation	species					Class	Cover					Ground Co		al	·	
Reading pe	Convia bonari	cynodon dathlon Ludwigia peoloid	es Meliotus alba	plantagolance	galais Sonchus der?	çe ^{us}	native	Hornative	&otin	Moligit	\$34°E	ROCHICOLORIE	Leaf Litter	coarsemood	udebris unater	mud	groutedrin	¹ Sala
77										1								1
78										1								1
79										1								1
80										1								1
Totals	5	0 1	7	9	15			0 33	0	47		2 0	32	0		1	0 4	.5
							Total Clas	ss Cover:										
							Native		0									
							non-nativ	'e	41.25									
	_						no vegeta	ation	58.75					_				

Reach: 24												
Transect N	umher: 2C	_										
Transcet iv	Vegetation species	_	Class	s Cover			Gro	und Cov	er Materia	l		
	vegetation species	_	Cias	3 COVE			GI C	una cov	ei iviateila			
	Ludwie a pedoides Typha sp.											
	OEPI		e									
	ilėja, seb.		ie nativ		dank	<u>ا</u> م						
Reading ne	July They		Mative Monnative	BOIL M	OPlant	nater						
1	1	-	<u> </u>	1		1						
2	1	_		1		1						
3		_		1		1						
4		_		1		1						
5		_		1		1						
6		-		1		1						
7		-		1		1						
8				1		1						
9		-		1		1						
10		-		1		1						
11		_		1		1						
12		_		1		1						
13		_		1		1						
14		_		1		1						
15		_		1		1						
16		_		1		1						
17		_		1		1						
18		_		1		1						
19		_		1		1						
20		_		1		1						
21		_	1	1		1						
22		_	1			1						
23		_	1			1						
24		_	1			1						
25		_	1			1						
26		-	-		1	1						
27					1	1						
28					1	1						
29					1	1						
Totals	20 5	5	5 2	0 0	4		0 0	0	0	0	0	
1 2 3 4 . 5				-	•							
			Total Class Cover:									
			Native	17.24138								
		-	non-native	68.96552								
			no vegetation	13.7931								
			-0									
		-										

Reach: 24										
Transect N	umber: 2C	-								
	Vegetation species			Class	Cover			Ground Cov	ver Material	
Reading pe	Ludwiga peploides Typha sp.		Native	Mornative	Bari	MO Plant	wa ^{tet}			

Total Class Cover Percent Average for 24-3A,B, and C:

Native 2.713333 non-native 31.75 no vegetation 67.08333

Reach: 24										
	umber: 3A									
	Ve	getation species			Class Cover	•		Ground Co	ver Material	
Reading pe	Ambrosia psilostachya Cyperus sp.	Mellotus alba Plantago la	sondhus deraceus	Native Native	Non-native Both	Modaux	Base Bock/Copple	Leaflittet Coarse mood	water mud grouted inter	,s
2	1				1			1		
3	1	1			1			1		
4		1	1		1			1		
5		1			1			1		
6		1		_	1			1		
/		1			1			1		
8		1	_	_	1			1		
10		1		_	1			1		
11		_	1		1			1		
12			1		1			1		
13			1		1			1		
14			1		1			1		
15		1	1		1			1		
16		1			1			1		
17		1			1			1		
18 19		1			1			1		+
20		1			1			1		+
21		1			1			1		
22		1			1			1		
23		1			1			1		
24		1			1			1		
25		1			1			1		
26		1			1				1	
27		1			1				1	
28		1	1		1				1	
30			1		1				1	+
31		1	1		1				1	
32		1			1				1	
33		1			1				1	
34		1			1				1	
35		1			1				1	
36		1			1				1	L
37		1			1				1	L
38		1			1				1	r

Reach: 24		
Transect Number: 3A		
Vegetation species	Class Cover	Ground Cover Material
Reading pe kmbrosia psilostachya Chperus sp. Neilotus alba spantago lanceolata sonchus de sonchus d		Rare RocklCobble Leaf Litter Coarse woodhy debris Routed riprate 1
40 1	1	1
41 1	1	1
42 1	1	1
43	1	
44		
45	1	
46 47	1	
48		
49		
50		
51		
52		
53		
54 55		
56		
57		
58		
59		
60		
61		
62 63		
64		
65		
66		
67		
68		
69		
70 71		
72		
73		
74		
75		
76		

Reach: 24																		
Transect N	umber: 3A				_													
	\	egetation spec	ies	1			Clas	s Cover	1		1	1	Ground Co	ver Mate	rial	<u> </u>		
Reading pe	Ambrosia psilostachya	P. Weildtie alba		eolata Sonthus der	gents	Native	Monnative		No Plant	&ate	Rock/Cobble				mud	€GC	ited ilotak	
77					-				1								1	
78					_				1								1	
79					_				1	-							1	
80					_	-			1								1	
81 82					-	-			1 1	-							1	
83					_	-			1								1	
84					_				1								1	
85					-				1								1	-
86					_				1								1	
87									1								1	
88									1								1	
89					_				1								1	
90					_				1								1	
91					_				1								1	
92					_				1								1	
93					_				1								1	
94					_				1	_							1	
95 96					_				1 1								1	
96					_				1	-							1	
98					_				1								1	
99					_				1								1	
100					_				1								1	
Totals	2	1 37	8	5		0	4	5 2			0 0	32	0		0	1	67	
						Total Class	Cover:											
						Native non-native		2 47										
					-	no vegetat		53										
						- 502334												

Reach: 24			
Transect Number: 3B	Vegetation species	Class Cover	Ground Cover Material
	vegetation species	Class Cover	
Reading pe Ambrosia psilostach	er subulatus Relicius alba Rantago lanceolata Scirpus californica Sonchus oleraceus	Native Norrative Both Norlant	Rate Rock Colore Leaf Litter Coarse mooth debris Rud Brouted riprad
2	1	1	
3	1	1	
4 1	1	1	
5 1	1	1	
6 1		1	
7 1	1	1	
8 1		1	
9 1		1	
11	1	1	
12	1	-	1
13 1	1	1	
14	1	1	
15	1 1	1	
16	1 1	1	
17	1 1		
18	1 1 1	1	
20	1 1	1	
21	1 1	1	
22	1 1	1	1
23	1	1	1
24	1	1	
25	1	1	
26	1	1	
27 28	1	1	
29	1	1	
30	1	1	
31	1	1	
32	1	1	
33	1 1	1	
34	1 1	1	
35	1	1	
36	1	1	
37	1	1	
38	1		1

Reach: 24																		
Transect No	ımher: 3R				-	-	1											
Transcet ive	ATTIOCT: 3D	Vegetation species			_		Class	Cover		-				Ground Co	⊥ ver Materia	1		I
Reading pe	Ambrosia Psilic	ostachya Astersubulatus Meliotus alba Plantago land	eolata Scirous calko	rnica Sonchus deri	aceus	Mative	ative		No Plant		₽ _{ate}	Rock/Colable		×			grouted riprat	ş
39		1			_		1						1					
40		1			_		1						1					
41		1			_		1						1					
42		1			_		1						1					
43		1			_		1						1					
44 45		1 1				-	1				-		1					
46		1			_		1			-			1					
47		1			-		1			-			1					
48		1					1						1					
49		1			_		1						1					
50		1			_		1						1					
51		1			_		1						1					
52		1			_		1			_			1					
53		1			_		1			_			1					
54		1			_		1			-			1					
55		1			_		1			-			1					
56		1			_		1			-							1	
57		1		1	_		1			-							1	
58 59				1	_		1			-							1	
60						_	1		1	-			1				1	
61					_	_			1	-			1				1	
62									1								1	
63									1								1	
64					-				1								1	
65									1								1	
66									1								1	
67									1								1	
68									1								1	
69				_					1			_					1	
70									1								1	
71									1								1	
72									1								1	
73									1								1	
74									1								1	
75									1								1	
76									1								1	

Reach: 24											
Transect Number: 3B						_					
	Vegetati	on species			Class Cover				Ground Co	ver Materia	
Reading pe Ambrosia psilostachya 77	atus Melilotus alt	,3 ²⁰ .0	į sus	ative		_{NO} Plant	Bale	ROCHICODOR			grouted riprat
77						1					1
78			_			1					1
79			_			1					1
80 81			_			1					1
81						1					1
83						1					1
84						1					1
85						1					1
86						1					1
87						1					1
88			_			1					1
89			_			1					1
90						1					1
91			_			1					1
92			_			1					1
94			_			1					1
95			_			1					1
96						1					1
97						1					1
98						1					1
99						1					1
100						1					1
101						1					1
102						1					1
103						1					1
104 105		 				1					1
105						1					1
107						1					1
108						1					1
109						1					1
110						1					1
111						1					1
112						1					1
113						1					1
114						1					1

Reach: 24																	
Transect Nu	umber: 3B																
		Vegetation species					Class	Cover					Ground Co	ver Materia	ıl		
Reading pe	Ambrosia psik	stachya Astersubulatus	scirous californ	sorthus oler	ge ^{us}	Notive W	nr. native	80th	Mo blant	Bate	Rocklicopole	Leaf Litted	Coarse mooth	nated nated	mud	storted rioras	?
Totals	8	1 48 9	6	3		3	51	4	55		2 0	50		4	ļ	0 58	
						Total Class Cov	er:										
						Native		6.140351									
						non-native		48.24561									
						no vegetation		48.24561									

Reach:				
Transect Number:				
Vegetation species	Class Cover		Ground Cover Materia	
<u>- υ</u>				
Reading per foot:	Mative Monnative Both Moplant	nated		
1	-			
2		1		
3		1		
4		1		
5	-	1		
6		1		
7		1		
8		1		
9		1		
10		1		
11		1		
12		1		
13		1		
14		1		
15		1		
16		1		
17		1		
18		1		
19		1		
20		1		
21		1		
Totals 0	0 0 0 2	21 0	0 0 0	0 0
	Total Class Cover:			
	Native 0			
	non-native 0			
	no vegetation 100			

Total Class Cover Percent Average for 24-4A,B, and C:

 Native
 3.203333

 non-native
 68.37667

 no vegetation
 31.72333

Reach: 24							_									
										_						
Transect Number: 4A		\/a=a+a+i						Class Causes		_				Crawad Cawar Matarial		
		vegetatio	on species				_	Class Cover		_				Ground Cover Material		
Reading pe Arridosia psil	CHIS	, 6	. 4			,								Coarse moody debris		
	os ^{tav} ke	inst mus	oide,		inica .	ceus								deti		
Psi	Convia bonarie	helantus amus	neliotus alb	8 POHEDININ ST	Scirpus californica Sonchus olera	•		,e				dricoppie,		gody	grouted riprof	₹
osia.	1800	nthur igia k	igus	Onli	us co		æ	nativ	iant			10p.	, ittel	e we	,ed(,,	
Pooding no Ambi	COUNT	religi Indm	Meline	20/1/8	cliffe conci		Native	Norrative Both	Mo Plant		bare bo	ζ _τ , ΄	eatlitter	Coarse water mud	MOUL	
neading per Y			<u> </u>	1	7 7			1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_	V (4		~		*0	
2		1		1	1		_	1		_				1		
		1			1			1		_						
3		1			1			1		-				1		
4		1			1			1		_				1		
5 1		1			1		_	1		_				1		
6 1			1					1		_				1		
7 1			1					1		-			1			
8		4	1					1		-			1			
9		1	1					1		-			1			
10		1	1					1		_			1			
11		1	1					1		_			1			
12		1	1					1		_			1			
13		1	1					1		_			1			
14			1					1		_			1			
15			1					1		_			1			
16			1					1		-			1			
17			1					1		-			1			
18			1					1		-			1			
19			1					1		_			1			
20			1					1		-			1			
21			1					1		-			1			
22 23 24			1					1		_			1			
23			1					1		-			1			
			1					1		-			1			
25			1					1					1			
26			1					1		-			1			
27			1					1		_			1			
28			1					1		-			1			
29			1					1		-			1			
30			1					1					1			
31			1					1		-			1			
32			1					1		_			1			
33			1					1					1			
34			1					1					1			
35			1					1					1			
36			1					1					1			
37			1					1					1			
38			1					1					1			
39			1					1		-			1			
40			1					1					1			
41			1					1					1			

Reach: 24												
Transect Number: 4A												
Transect Number, 4A		ion species				_	Class Cover				Ground Cover Material	
	vegetat	ion species					Class Cover					
Reading pe Ambrosia psi	nostachya bonaiensis Conyla bonaiensis Helianthus annuus	Weilding alpa	odygonum sp.	us californica sonethus de rac	ge ^{US}	Majive	Morrative Soin	No Plant	Bate ROCHICO	ole Leat littlet	Coarse moody debris	grouted riprain
Reading pe 🔊	Co He m	4/10 8	30, 30,	30.		40	40 80	40	8,0	· Ser	Co no we	\$ C
42		1					1			-		
43		1					1			-		
44		1					1					
45		1					1			1		
46		1					1			1		
47		1					1			1		
48		1					1					
49		1					1					
50		1					1					
51		1					1					
52		1					1				L	
53		1					1				L	
54		1					1				L	
55		1					1			-		
56		1					1				L	
57		1					1				L	
58	1	1					1					
59	1						1				L	
60				1			1				L	
61		1		1			1				L	
62				1			1			-	L	
63				1			1					
64								1				1
65								1				1
66								1				1
67								1				1
68								1				1
69								1				1
70								1				1
71								1				1
72								1				1
73								1				1
74								1				1
75								1				1
76								1				1
77								1				1
78								1				1
79								1				1
80								1				1
81								1				1
82								1				1

Reach: 24																
Transect Number: 4A						_										
Transect Number: 4A		Voc				_		Class Cover						Ground Cover Mate	wio!	
		vege	etation species			_		Class Cover								
Reading pe Arratosia psil	Convia bona	keisithus annuus	sia pedoides neillotus albí	o Polygoritus	P. Scirpus californica Sonchus oler	ace ^{us}	Mative 6	yourdive Both	No blant		,e 8		jtt ^{et}	Coarse mooth depirts	.8	grouted riprass
Reading pe	COX.	Her. Inc	The.	601,	sciii. soi.		4200 4	Jonne Both	40		Bare Rock	√e, _o		Con Man	mud	\$ C
83										1						1
84						_				1						1
85						_				<u></u>						1
86						_										1
87						_				<u>-</u> 1						1
88						_				<u>-</u> 1						1
89										1						1
90										<u> </u>						1
91										<u> </u>						1
92						-				<u>-</u> 1						1
93						_				<u>-</u> 1						1
94						_				<u>-</u> 1						1
95						_				<u>-</u> 1						1
96						_				<u>-</u> 1						1
97						_				_ 1						1
98						_				<u>-</u> 1						1
99						_				<u>-</u> 1						1
100						_				_ 1						1
101						_										1
102						_				<u></u>						1
103						_										1
104						_				_ 1						1
105						_										1
106						_				1						1
107						_				1						1
108						-				1						1
109										1						1
110										1						1
111										1						1
112										1						1
113										1						1
114										1						1
115										1						1
116										1						1
117										1						1
118										1						1
119										1						1
120										1						1
Totals 3	2	5	5 54	1	4 4		0	54	9 5	7	0	0	57	0	5	1 57
							Total Class Co	over:								

Reach: 24																	
Transect Number: 4A																	
			Vegetatio	on species					Class Cover					Ground Cover Mater	ial		
, osia psill	ding pe Androsia bilotatathus andra kelianthus annus abeloides Nellotus alba Polykonum sp. Scirpus altornica Sonchu									NO Plant		sue socifi	leaf litter	Coarse moody depris	mud	grouted ribrat	\$
							-	Native	7.5		-						
								non-native	52.5		_						
								no vegetatio	on 47.5								

Reach: 24				
Transect Number: 4B				
	Vegetation species	Class Cover		Ground Cover Material
Reading pe Ambrosia psil	Convia bona iensis Nellotus alba Polyeonum sp. Scirous californica	Native Norrative Both No Plant	Bare Rock/Cotole Leaf.itter	Carse mooth debris nud grouted riprass
2 1	1	1	1	
3				
4			1	
5 1		1	1	
6 1	1	1	1	
7	1	1	1	
8	1 1 1	1	1	
10	1 1	1	1	
11	1	1	1	
12	1	1	1	
13	1	1	1	
14	1	1	1	
15	1	1		
16 17	1	1	1	
18	1	1	1	
19	1	1	1	
20	1	1	1	
21	1	1	1	
22	1	1	1	
23	1		1	
24	1	1	1	
26	1	1	1	
27	1	1	1	
28	1	1	1	
29	1	1	1	
30	1	1	1	
31	1	1	1	
32 33	1	1 1	1	
34	1	1	1	
35	1	1		1
36	1	1		1
37	1	1		1
38	1	1		

Reach: 24									
Transect Number: 4B									
	Vegetation species			Class Cover				Ground Cover Material	
Reading pe Ambrosia psi	Contra donariensis	Scirpus californica	Wative		Mohlant		8ate	abis	grouted riprat
39	1			1					1
40	1			1					1
41	1			1					1
42	1			1					1
43	1			1					1
44	1			1					1
45	1			1					1
46	1			1					1
47	1			1					1
48					1	-			1
49					1				1
50					1				1
51					1				1
52 53					1				1
54					1				1
55					1	-			1
56					1				1
57					1				1
58					1	-			1
59					1				1
60					1				1
61					1				1
62					1				1
63					1				1
64					1				1
65					1	-			1
66					1				1
67					1				1
68					1				1
69					1				1
70					1				1
71					1				1
72 73					1				1
74					1 1				1
75					1				1
76					1				1
70					1				

Reach: 24																
Transect No	umber: 4B				-											
	Ve	getation spec	cies		-		Class Cover			- 1		Ground Cov	ver Material	l		
Reading pe	achya	riensis		e. Scirpus califor	nica	Wative		No Piant	₽ate.	ROCHCODDIE				mud	grouted riptap	
77								1							1	
78					-			1							1	
79					-			1							1	
80					-			1							1	
81					-			1							1	
82								1							1	
83								1							1	
84								1							1	
85					-			1							1	
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Totals	4	L 46	2	2		0	48 2	45	(0	33	0	0	1	61	
						Total Class										
						Native	2.105263									
						non-native										
						no vegetat	ion 47.36842									

Reach: 24					
Transect Number: 4C					
Vegetation species	Class Cover		Ground Cov	er Material	
				:6	
:de ^s			oble Leaflitter Coarse moody	deptr	
eglo.	0.		we 964	·	
igi ^{QQ}	Wative Woulding Both Wobach	ري ا	ob itter emor		concrete
2 diameter de la constante de	Hative Holinati Both Holian	Bare Rockill	est. Corse	water mud	oncre
Reading pe Ludwigia peoloides 1 1 2 1	6 6 6	<u>δ</u>	Joble Leaflitter Coarse moody	70 (7.	<u> </u>
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Totals 18	0 18 0	0 0	0 0 0	18 0	0
	Total Class Cover:				
	Native 0				
	non-native 100				
	no vegetation 0				

Total Class Cover Percent Average for 25-1A,B, and C:

 Native
 46.58333

 non-native
 46.66667

 no vegetation
 36.82

Decel 25			1				1								
Reach: 25 Transect Number: 1A											_				
mansect Number. IA	1	1 1	1	Vegetation	n species					Class Cover			Ground Cov	er Material	
				regetativ	on species	-6-				5.035 65 (6.1					
	Confra bona fereis Eutrania oci	otalis		is alata		unis Ecotoline see aline Ecotoline	mulo	ica ganum	arium				Leaf little Coarse mooth	nis	
	Conyra dona die distrantia oci	iden doide	non native et	iss color	P. Radhanus sakuus Richius confi	unis gelise c	gii ^{rsi}	rriica ericant	"ruma"				48	det	Ingioted three
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Reading pe C4	0 0	10 44	1	δ ₆₀ δ ₀	Ko. Kie		30	50 (4)	40	40 Kg 80 Kg	80	₹0	1	41, 44, Ac	JI.
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Reach: 25									=						
Transect Number: 1A				Vegeta	tion species				-	Class	Cover		Ground Co	over Material	
				vegeta	tion species				_	Class	Cover		Ground Co	over iviacerial	
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86.	yonar iaod	ide Mellotus about Mellotus ab	ine b	Plantago lanceolt	ish is sair	in, odqiya oqqi	ne Scirpus californ Solanum art	e astr		s _{ki} .		safe Rocklice	oble set moof	97	drily
Reading pe CAPERIUS SP.	Wal shami	dwigie allotu	o-nat.	ntagu wgone	shant inust	"# 800" "# 800"	coust lanur.	Typha sp. tanthium sc.		Native Northative	BOTH NO PLANT	l e H	bole Leaflitter Coarse mod	water mud train	groute
Reading pe C/Y	COL. FIRE	True We	UOI.	6/19, 60,,	Rak Ric	sair sair	SCIT. SOIL	445 tar		4gc 40.	Both Hobian	Base Bock/C	1600 COD	water mud grash	Trup
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										Total Class Cover:					
										Native	70.83333				
									-	non-native	53.33333				
			1							no vegetation	9.166667				

Reach: 25																	
Transect Number: 1A																	
						Vegetation species				Class Cover			Ground Co	ver Materia	İ		
							tanthum stri	nratur Ratue	Rottingine Both Rolling	Baie	Rock(Cobble	Leaflitter Charge mod	water	nut Haft	ungouted infi	%	

	ı										1				
Reach: 25															
Transect Number: 1B											Class	Cover		Ground Cover Material	
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rransect N	umper: 1b										Class Cover		Ground Co	ver Material		
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Reach: 25 Transect N																									
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															Total Class Cover:										
															Native	29.3617									
															non-native	45.10638									
															no vegetation	40.85106	5								

Reach: 25													
Transect Number: 1C		-											
Vegetation spe	ecies	-		Class	Cover				Ground Co	ver Materia	l		
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Reach: 25												
Transect Number: 1C		_					_					
	getation species	_		Class (Cover		_			Ground Co	ver Material	
		_		Class	COVCI		_			Leaf Littlet Coarse mood	:G	
	Scirpus californica										debris	
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Reading no 20118	Scirpus califo	,	Mative	Monnative	BOTH	Mobiant		Bare	SOCKI	legit coars	uster mud concrete	
Reading pe QOWBORUM 57			<u> </u>			1			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Leaf Litter Coarse mood	1	
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79		_				1	_				1	
80						1	_				1	
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Reach: 25															
Transect Number	·· 1C							_							
Transect Namber	Vegetation	snecies		_	Class	Cover		-			Ground Co	ver Materia			
					Class	Cover		-				•6			
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	ેલ્ઠ.	.:fOrnia								e	Š	40			
	MIN'S	Call.	જે.		ative		z _c x			idely inter	o MOC			xe	
Mes	, ilbn,		phasp.	Mative	MORRATIVE	BOTT	Mobilant		Bare	ROCK/CORDIE LESS LITTES	arse	water	mud	concrete	
Reading pe 90 MgG	Jun sp.	14	,,	40	40	80			80	40 /e	Coarse mooth	1/10	41,	S.	
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Reach: 25													
ransect Number	er: 1C						-						
		tion species		C	lass Cover		-			Ground Co	ver Material		
							-				:5		
		rous californica								Leaflitter Coarse Mood	debri		
	^{لر} يخ.	ifort.			æ				n/e	500	H		
	COUNTY.	ns Car	² 60.	le s		Jant			COPE	litter cemo		,e ^{te}	
Reading pe 90 ⁰⁰	الان درا	162	usst.	Mative Monna	BOTH	No Plant		Bare	20gr	Leaflitter Coarse mood	nater mud	concrete	
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ocais	12	12	12	U	72	110			U	U	110	12 0	,
				Total Class Cover:									
				Native	39.56044								
				non-native	39.56044								
				no vegetation	60.43956								
					23.13330								

Reach: 25														
Transect Number: 1C														
Vegetation species				Class	Cover				Ground Cover Material Ground Cover Material Coarse month debris Coars					
Reading pe Polygonum sp. Scirpus califor	LADYO 28.		Ralive	Montative	Both	Notiant	Bare	ROCKICODDIE	leaf litter	Mood	, ,	mid	concrete	

Total Class Cover Percent Average for 25-2A,B, and C:

Native 19.37667 non-native 34.41 no vegetation 51.67667

Reach: 25					_										
Transect Number: 2A				Vegetation species	-		Class Cove	r	_			Ground Cover Materi	al		
Reading pe knotosia psi	nostačin ^o odcidentalis Eutramia odcidentalis	Tulkare Helianthus a	nnus non notive t	onanettal phragnites australis radius stirus communis sources of the sources of t		Mative	Morraine Bot	, kotari	Ķ	Bare	Rock/Cobble Leafling	Coase moody debits	mud	urgoutedrie	¹ (a)
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35	1			1		1							1		
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Reach: 25																		
Transect Number: 2A											_							
Transect Number. 2A				Vegetation species			-	Class C	`ovor		_			Ground Cover	Matorial			
				vegetation species				Class	JOVEI		_			Ground Cover	iviaterial			
Reading pe Androsia qui	Luthania ocidentali	tellum vuleate	non-native et	Organizated Progenites authralic	Rative Ricinus Continuis Sonti	us dereceis	Wative	Montagine	BOTE 1	Moriant	8ate	ROCKIC	Store Leaflither	Coate mood det	ji ⁵	nud	un@folited ito	8
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							Total Class		40 41176									
							Native non-native		49.41176 41.17647									
							no vegetati		21.17647									
							no vegetati	011	21.1/04/									

Reach: 25																	
Transect Number: 2B										C I-	Cover	-		C	or Material		
				nor rathe gas Linury so.	(III)					Class	Cover	_		Ground Cov	ver Material		
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					ochola												
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chaiss	Corrig Colour Chosing 24.	Cynodon daetyle Helianthus af	neilotus alt	anative stagola	ugonun. nuscon.	Runey disput Southus den	Washington	a Santhium strut		Mative Monroative	BOTT MORIANT		netal pipe Roch Couple	Leaflitter Coarse mood	-e ^t >	d cretella	routeo
Reading pe Sactharit Sall	Coppe CAbe	CAUGE HEIR	Wer	vou bisu	POM2 BICH	Run. Sour	1/132				BOTH MO NATI	_	Wer Boc.	reg Cog	water mud	sand concret Hash	Just Out.
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Reach: 25 Transect Number: 2B											-								_
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Reading pe & Cotul	Cherrest. Choqui pa	telianus anus Mellous ali	vou., blaur	60148	Richus Commu	sorthede Realist	Jania St. Kanthium strum		Native Non-native	BOTH NO PLANT		metal pipe	ROLH CODDE LESS LITTES	Coarse mood	water	mud	sand concrete	Asthall Inglotted	
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Reach: 25 Transect Number: 2B																	
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issali	ictory Charlesto.	Cynodon dat tylon	wellotus alt	of ineffe	ces Bohkounus S. Briting count	Runes dispus	washing dia sa.		s _{ij} e	x.		,oe	ROCH/Cobble	ret mood		"elashi"	"equip"
acthair	Corrig Colour Chosing 28.	modor alianti.	elilotu	antage antage	alyeon cinuse	imet anchus	lashing anthun		Native Non-native	BOTT NO PLANT		metal pipe	CHICO.	leaflitter Coarse mood	natet mud	sand concrete trash	agoute
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Reach: 25																			
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Reach: 25													
Transect Number: 2C					_								
Vegetation species		Class	Cover		_				Ground Cov	ı ver Material			
vegetation species		Class	COVCI		_				Ground Co.				
									Coatse mood	repuls.			
							\e		36	10			
		ative		×			COPPIL	xes	NOO			xe	
	Mative	on-no	BOTT	Plai		Bare	acklo	aflil	arse	ater	mud	concrete	
Reading per foot:	40	Honnative	80	No Plant	_	80	ROCKICODILE	Se.	CO.	n'o	W.	co,	
1				1	_					1			
2				1	_					1			
3				1	_					1			
4				1	_					1			
5				1	_					1			
6				1	_					1			
7				1						1			
8				1						1			
9				1	_					1			
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17				1	_					1			
18				1	_					1			
19				1	_					1			
20				1	-					1			
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23				1	_					1			
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33				1						1			
34				1						1			
35				1						1			
36				1						1			
37				1						1			
38				1	_					1			
30				1						1			

Reach: 25					
Transect Number: 2C					
Vegetation species	Class Cover		Ground Cover Mater	ial	
vegetation species	Class Cover		a		
			Leaflitter Coase mooth debris		
		Me Me	0840		
	e sative ant	Look	itter e mo	, e ^{xe}	
Reading per feet	Native Mornative Both Moplant	sare Rockil	Lest Little Coatse water	mud concrete	
Reading per foot: 39					
40	1			1	
41	1			1	
42	1			1	
43	1			1	
44	1			1	
45	1			1	
46	1			1	
47	1			1	
48	1			1	
49	1			1	
50	1			1	
51	1			1	
52	1			1	
53	1			1	
54	1			1	
55	1			1	
56	1			1	
57	1			1	
58 59	1			1	
60	1 1			1	
61	1			1	
62	1			1	
63	1			1	
64	1			1	
65	1			1	
66	1			1	
67	1			1	
68	1			1	
69	1			1	
70	1			1	
71	1			1	
72	1			1	
73	1			1	
74	1			1	
75	1			1	
76	1			1	

Reach: 25				
Transect Number: 2C				
Vegetation species	Class Cover		Ground Cover Materi	_
vegetation species	Ciuss cover		:6	
			Leaflitter Coarse mooth debris	
		Me Me	2084	
	a cative ant	Look	itter e wo	,e ^{ie}
Reading per feet:	Wative Monnative Both Moplant	sare Rockil	lest little Costse Mater	mud concrete
Reading per foot: 77			Ç C n	
78	1			1
79	1			1
80	1			1
81	1			1
82	1			1
83	1			1
84	1			1
85	1			1
86	1			1
87	1			1
88	1			1
89	1			1
90	1			1
91	1			1
92	1			1
93	1			1
94	1			1
95	1			1
97	1 1			1
98	1			1
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102	1			1
103	1			1
104	1			1
105	1			1
106	1			1
107	1			1
108	1			1
109	1			1
110	1			1
111	1			1
112	1			1
113	1			1
114	1			1

Reach: 25				
Transect Number: 2C				
Vegetation species	Class Cover		Ground Cover Materi	ial
vegetation species	Class cover		Leaf.itter Coarse moody debris	
			debris	
		e	240	
	a stive ont	Cologn	iter suoc	a se
	Matine Mouriagine Both Mobility	sare Rockil	Leaflitter Coarse moody water	mud concrete
Reading per foot:	4 8 4		\$ C 1	
115 116	1			1
117	1 1			1
118	1			1
119	1			1
120	1			1
121	1			1
122	1			1
123	1			1
124	1			1
125	1			1
126	1			1
127	1			1
128	1			1
129	1			1
130	1			1
131	1			1
132	1			1
133	1			1
134	1			1
135	1 1			1
137	1			1
138	1			1
139	1			1
140	1			1
141	1			1
142	1			1
143	1			1
144	1			1
145	1			1
146	1			1
147	1			1
148	1			1
149	1			1
150	1			1
151	1			1
152	1			1

Reach: 25				
Transect Number: 2C				
Vegetation species	Class Cover		Ground Cover Materi	al
vegetation species	Class cover		Leaf.itter Coarse moody debris	
			debris	
		e	240	
	a stive ont	,copp.	iter suoc	, ie
	Mative Morriative Both Moriant	Bare Rock/C	Leaflitter Coarse moody water	mud concrete
Reading per foot:	4 8 4		\$ C 1	
153 154	1			1
155	1			1
156	1			1
157	1			1
158	1			1
159	1			1
160	1			1
161	1			1
162	1			1
163	1			1
164	1			1
165	1			1
166	1			1
167	1			1
168	1			1
169	1			1
170	1			1
171	1			1
172	1			1
173	1			1
174	1			1
176	1			1
177	1			1
178	1			1
179	1			1
180	1			1
181	1			1
182	1			1
183	1			1
184	1			1
185	1			1
186	1			1
187	1			1
188	1			1
189	1			1
190	1			1

Reach: 25				
Transect Number: 2C				
Vegetation species	Class Cover		Ground Cover Materi	_ al
vegetation species	Class cover		Leaf litter Coarse mody debris	
			debris	
		e	240	
	a stive ont	,copp.	iter suoc	že
	Mative Morriative Both Moriant	Bare Rock/C	Leaflitter Coarse moody water	mud concrete
Reading per foot:	4 8 4		\$ C 1	
191	1			1
193	1			1
194	1			1
195	1			1
196	1			1
197	1			1
198	1			1
199	1			1
200	1			1
201	1			1
202	1			1
203	1			1
204	1			1
205	1			1
206	1			1
207	1			1
208	1			1
209	1			1
210	1			1
211	1			1
212	1			1
213	1			1
215	1 1			1
216	1			1
217	1			1
218	1			1
219	1			1
220	1			1
221	1			1
222	1			1
223	1			1
224	1			1
225	1			1
226	1			1
227	1			1
228	1			1

Reach: 25										
Transect Number: 2C										
Vegetation species		Class Cover					Ground Cover Materia	al		
Reading per foot:	wative wo	Roth Both	WO Plant	8ate	ROCKICODOIR	Leallitter	Coarse Moody destricts	mud	concrete	
229			1	L			1	L		
230			1	L			1	L		
231			1	L			1	L		
232			1	L			1	L		
233				L			1	L		
234				L			1	L		
235			1	L			1	L		
236			1				1	L		
237			1	L			1	L		
238			1	L			1	L		
239			1	L			1	L		
240			1							
Totals 0	0	0	0 240)	0 0	0	0 240	0	0	
	Total Class Cove	er:								
	Native		0							
	non-native		0							
	no vegetation		100							

Total Class Cover Percent Average for 25-3A,B, and C:

Native 25.63667 non-native 54.00667 no vegetation 34.58

Reach: 25												
Transect Number: 3A												
Transect Number: 3A		tation species			_	Class	Cover	_		Cround Co	ver Material	
	veget	tation species				Class	Cover	_				
Reading pe Arnafarithus	retroflexus Arthrosia psilostachya Euthania ocidentalis non native glass	Polykounuso. 1	Solahun anericanun Sorthus dela e	eus Kanthium strumanum	Matine	Wornstive	80 th No plant	43te	Rod Coppe Leaf litter	Coarse mooth	Ndebris Nuder Rud Inferonted in	isos
2	1	1 1		1		1	1				1 1	
4	1	1				1					1	
5	1					1					1	
6	1					1					1	
7 1	1					1					1	
8	1					1					1	
9	1					1			1			
10	1					1			1			
11			1		1				1			
12			1		1				1			
13		1				1			1			
14			1		1				1			
15 16	1	1	1				1		1			
17	1	1	1			1	1	_	1			
18	1	1				1		_	1			
19	1	1	1				1		1			
20	1	1	1				1		1			
21	1	1				1			1			
22	1	1	1			1			1			
23	1			1			1		1			
24	1					1			1			
25	1					1			1			
26	1	1				1			1			
27	1	1				1			1			
28	1	1				1			1			
29				1		1	1		1			
30 31	1			1		1	1		1			
32	1					1			1			
33	1					1			1			
34	1					1			1			
35	1					1			1			
36	1					1			1			
37	1					1			1			
38	1					1			1			
39	1 1						1		1			
40	1 1		1				1		1			
41	1		1			1			1			
42			1			1			1			
43			1			1			1			

Reach: 25												
Transect Number: 3A												
	Vegetation species			Class Cover			<u>.</u>		Ground Co	ver Material		
Reading pe Arnafarithus retroflexus Arnafosia pe	Kotachya occidentalis PohBoum sa.	solaturi arteitaturi Solaturi arteitaturi Sontius oletateus	gnatum.	Mative Monnative Both	Mo blant		_{Bate}	Rock/Cobble	Leaf Litter Coatse mood	ydebis water	mud	ungouted in rap
44	1			1					1			
45	1			1					1			
46	1			1					1			
47	1			1					1			
48	1			1								1
49	1			1								1
50	1			1		_						1
51	1			1		_						1
52	1			1		_						1
53	1			1		_						1
54					1	_						1
55					1	_						1
Totals 6	29 14 14	7 1 3		3 40 10	2		0	0	39 0	1	7	8
						_						
				Total Class Cover:								
				Native 23.63636								
				non-native 90.90909		-						
				no vegetation 3.636364								
						-						

Dh-25					
Reach: 25					
Transect Number: 3B		Class Course			
		Class Cover			
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	"Olso"				
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*erst deros *harr diarit dilote	nnae acelle nitale went nithiu	Native Mouriage Both Moustain Body Coates Ma	6.	8	groule
Reading pe Aster Subulatus Androsia atarthicarpa occidentalis Industrial Religious all Religious Androsia atarthicarpa occidentalis Industrial Religious all	is nor native grass Cynodon dathyon and Echinochola crus ealish Phaceia cultaria Patrium stri	Redium Redium Ropant Ropant Ropant Rolling Rock Copie Rock Rock Rock Rock Rock Rock Rock Rock	er mud	sand	ungouted ripras
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3 1	1			L	
4 1	1 1		1		
5 1	1		1	_	
6 1			1	-	
7 1			1		
8 1	1		1		
10 1	1			1	
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12	1			1	
13	1	1		1	
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15 1	1 1	1		1	
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24 1 1				1	
25	1	1		1	
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27	1 1	1		1	
28	1	1		1	
29	1			1	
30	1			1	
31	1			1	
32				1	
33				1	
34 35				1 1	
35 36				1	
37				1	
38 1				1	

Reach: 25											
Transect Number: 3B											
Transect Number: 3B						Class Cover					
						Class Cover					
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			cruss								
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			and								
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ibult signe his or must	"US all	tive b is dice	to lai.	Mist		ative at	cobolic ret moor			xed\.	
ref st naros stran.	elilote	arinat sacelle	antals ayeon	athil		Matine Montaine Both Montain	Rockloppie seatified Coase mood, mater	mud	sand	agour	
Reading pe Aster subulatus Archrosia acanthicatoa (cultertalis Heliantrus and San	Meliotus alba	S but	thion and Echinochola crus-gali	P. Yanthum stri			Rocklodble Lestlikes Costse mooth debis	Kun	39.	ungouted ripri	
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41						1			1		
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59 60	1			1		1	1 1				
61	1			1		1	1 1		1		
62	1			1		1	1		1		
63	-	1				1			1		
64	1	1				1	1		_		
65	1	1				1	1				
66	1	1				1	1				
67	1	1				1			1		
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69 1						1			1		
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72 1						1			1		
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74 75		1				1	1				
75 76		1				1 1	1				
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Depole 25											
Reach: 25 Transect Number: 3B											
Transect Number: 3B						Class Cover					-
			<i>C</i> :.			Class Cover					
			(Balli)								
			crus								
			Golgo								
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		done									
carpo xalis	.6	Chor	×δ	<i>*</i>	ium		ni ^s				
rus antinit ident	Muly 3	, ass .	aria ceolat o.	umai	, ·		w der				96
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ersul abost martir wantir	dilotu	anati acelia	ntage we one	athiul		tive relati	HICO Stille greet ser	δ.	6.	golite	
Reading pe Aster subulatus Arnthosia acanthicana acathicana acanthicana acanth	Annue Mellotts alto	40, bye	aria Patriago arteolata Polygorum sp.	Xankhium skumati		Matire Hornative 80th Hopart		mud	sand	ungouted riper	
77 78		1				1	1				
78				1		1	1				
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94	1					1	1				-
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101	1			1		1 1	1 1				
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December 25											
Reach: 25 Transect Number: 3B			_								
Transect Number. 3B						Class Cover					
				.5	_	Class Cover					
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gubu gsiac miac athus	atus	ative aliacie	260/0	Onun ium's		e sative sont	Copy ixter o'no			cuteo	
Reading pe Aster subulatus Ambrosia at arthicarpa out identalis Helianthus a	weilotis alba	our, shace,	olanto	okenin sp. tarthim st.		Native Norvative Both Norvati	Rocklobble Lestliker Coarse mooth debris	mud	sand	ungouted ripress	
Reading pe Aster subulatus Ambrosia atanthico Helianthus a Lithamia occidento Helianthus a 115	4 (nonnative et ass Lynodon de phaceita cic	×	· +			C 0 2	V	1	3	
116	1	1				1			1		
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127	1				_	1 1	1 1				
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Reach: 25																					
Transect N	umber: 3B																				
					·							Class	Cover		·			·			
		5 8	inicato ^a ikec	_{Kali} s	\$	es (cur	odon dathon and f	adata	am	maium							debris				<i>જ</i>
Reading pe	Astersubulati	aribreia atari	nicatos ocider	kalis arnus arnus	Relilotus alba nos	Trative Blas	sia cicuta,	Jances PolyBonus	Ashthum st	,u.	Native	MONTATIVE	80th	Jo Plant	ROCK/CODDIE	eat litter co	ate mody debits	mud	sand	ungoutedin	
153														1						1	
154														1						1	
155														1						1	
156														1						1	
157														1						1	
158														1						1	
159														1						1	
160														1						1	
Totals	1	25	14	2	60	53	1	1	2 36	5	40	69	34	17	1	56	0	0	9 79	15	
											Total Class	Cover:									
											Native		46.25								
											non-native		64.375								
											no vegetat		10.625								
													23.323								
										-											
												1									

Reach: 25															1
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rransect N	umber: 3C			_		Class Carrain					Cuovis d C				
	Veg	getation species		_		Class Cover		<u> </u>			Ground Cov	ver iviateria	31		
Reading pe	krnafanthus fe ^k fohlekus oci	dentalis Polyeonum	SP. Kanthium strum	Brium	Native	Non-native Both	Modiant	Bate &	_{Aock} Cobble	leaf litted	Coarse moody	water water	mud	concrete	
2				_			1 1					-	1 1		
3				_			1					-	1		
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5							1					:	1		
6							1					,	1		
7							1					-	1		
8							1					-	1		
9				_			1					-	1		
10				_			1					-	L		
11			+	_			1					-	1		
12				_			1					-	1		
14			+	_			1 1					-	1		
15			 	_			1					-	1		
16				_			1					-	1		
17			 	_			1						1		
18				_			1					-	1		
19				_			1					-	1		
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25							1					-	1		
26							1					-	1		
27				_			1					-	L		
28				_			1					-	1		
29				_			1					-			
30				_			1 1					-	1		
32							1					-	1		
33							1					-	1		
34				_			1					-	1		
35							1					-	1		
36							1								
37							1					-			
	i l	i I	1			1	_				1	·	1		F

Reach: 25										
Transect Number: 3C		_								
	atation species	_	Class Cover				Ground Cov	or Matarial		
vege	etation species		Class Cover				Ground Cov	rer iviateriai		
Reading pe Arnafarthus retrofte Aus Cutharnia occid	nor native at ass Polyeonin sp. Tanthium strumatium	Wative	Monnature Both	40 plant	Bare Rock/Colonie	Leaf Litter	Coarse moody	water water	mud concrete	
38		-		1 1				1		
40				1				1		
41 42				1 1				1		
43		_		1				1		
44				1				1		
45				1				1		
46				1				1		
47				1				1		
48				1				1		
49				1				1		
50				1				1		
51		_		1				1		
52				1 1				1		
53 54		_		1				1		
55		_		1				1		
56				1				1		
57				1				1		
58				1				1		
59				1				1		
60				1				1		
61				1				1		
62				1				1		
63				1				1		
64				1				1		
65				1				1		
66				1				1		
67				1				1		
68				1				1		
69				1				1		
70				1				1		
71				1				1		
72				1				1		
73				1				1		
74				1				1		

Reach: 25																	
	lumber: 3C								-								
	Ves	getation specie	es	-			Class Cover	1			1		Ground Cov	ver Materi	al		
	.5	Bora mon apoore					0.000 0010.		-								
Reading po	Arnafarithus retroflexus	identalis glass	ts	anthium struc	natium	Notive	Nourrative Both	No blant		Bate	ROCHICODDIE	leaf litted	Coatse moody	water water		concrete	
75								1	-						1		
76								1							1		
77								1							1		
78								1							1		
79								1							1		
80								1							1		
81								1	-						1		
82								1							1		
83								1 1							1		
85								1	_						1		
86								1	-						1		
87								1							1		
88								1							1		
89								1	-						1		
90								1							1		
91								1							1		
92								1							1		
93								1							1		
94								1							1		
95								1	-						1		
96								1							1		
97								1							1		
98	3							1							1		
99								1							1		
100								1							1		
101								1							1		
102								1	-						1		
103								1	-						1		
104								1							1		
105								1							1		
106								1	+						1		
107								1	-						1		
108								1	-						1		
109								1	-						1		
110								1							1		
111								1							1		

Reach: 25																
	umber: 3C							-								
TI alisect IV		totation energies				Class Cover		-				Ground Co.	or Matari	al		
	veg	getation species				Class Cover						Ground Cov		dl		
Reading pe	Arnafahthus fetrofiekus oci	dentalis Romative grass	sp. Yankhiun stud	naium	Mative	Norvative Both	No flant		Bate	ROCHICODOR	Leaf Litter	Coarse wood	debris unater	mud	concrete	
112							1	_						1		
113							1	_						1		
114							1	_						1		
115							1							1		
116							1	-						1		
117							1	_	<u> </u>					1		
118 119							1	_	-					1		
119							1		-					1		
120							1	_						1		
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123							1	-						1		
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128							1	_						1		
129							1	_						1		
130							1	-						1		
131							1	_						1		
132							1	_						1		
133							1	-						1		
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136							1	-						1		
137							1							1		
138							1							1		
139							1							1		
140							1							1		
141							1							1		
142							1							1		
143							1	-						1		
144							1	-						1		
145							1	_						1		
146							1	_						1		
147							1	-						1		
148							1							1		

Reach: 25				_							
					-						
Transect Number: 3C			Class Carrain		_			Cuovis el C	on Metau'a		
Vegetation spe			Class Cover		_			Ground Cov	ver iviateria	I	
Reading pe Anarathus retroffe Authania occidentalis 149	Polygonin sp. Hanthium strumatium	Matine	Mon.native Both	Moriant		Base Rock/Copple	Leaf Littled	Coarse moody	dedis water	mud concrete	
149				1					1		
150				1					1		
151				1					1		
152				1	_				1		
153				1	_				1		
154				1					1		
155				1					1		
156				1	_				1		
157				1	_				1		
158				1	_				1		
159				1	_				1		
160				1	_				1		
161				1	_				1		
162				1	_				1		
163				1	_				1		
164				1	_				1		
165				1	_				1		
166				1	_				1		
167				1	_				1		
168				1	_				1		
169				1	_				1		
170				1					1		
171				1					1		
172				1					1		
173				1					1		
174				1	_				1		
175				1					1		
176				1	_				1		
177				1					1		
178				1					1		
179				1					1		
180				1					1		
181				1					1		
182				1					1		
183				1					1		
184				1					1		
185				1					1		

Reach: 25																
	umber: 3C			-				-								
TT at is ect IV		getation species		-		Class Cover						Ground Cov	or Matari	<u> </u>		
	ve	Reration sheries		-		Ciass COVEI								וג		
Reading pe	Arnafanthus fetrofiekus Oci	identalis polyeonur	Anthium struc	maium	Maline	Nonnative Both	No Sistir		Bate &	kock/Cobble	Lea Litter	Coarse moody	debris water	mud	concrete	
186 187				-			1							1		
188				_			1							1		
189				-			1	_						L 1		
				-			1							L		
190 191			_	-			1 1	-						1		
191							1	-						1		
193				-			1	-						1		
194				_			1	-						1		
195				-			1							1		
196				-			1	-						1		
197				-			1	-						1		
198				-			1							1		
199							1							1		
200				-			1	-						1		
201							1							1		
202							1							1		
203				_			1	_						1		
204				_			1						:	1		
205				_			1	-					:	1		
206				-			1	-						1		
207							1						:	1		
208							1							1		
209							1							1		
210				-			1	-						1		
211							1	-						<u> </u>		
212				-			1	-					-	1		
213							1	-					:	1		
214							1	-					:			
215 216				-			1 1	-						1		
217				-			1	-						1		
217				-			1	-					•	1		
218							1	-						1		
220				-			1	-						1		
221				_			1									
222							1	-						1		
							1						-	L		

Reach: 25		
Transect Number: 3C	Class Carrain	Cround Cours Material
Vegetation species	Class Cover	Ground Cover Material
Reading pe Arnafarithus retrollezus non native egass Polyeonum sp. 223 Reading pe Arnafarithus retrollezus non native egass Polyeonum sp. 4 Anthum strumative egass Polyeonum sp.	Native Norvative Both Noblant	Bare RocklCobble Leaf Litter Coarse mooth debris Rud concrete
223		1
224	1	
225	1	
226	1	
227	1	
228	1	
229	1	
230	1	
231	1	
232	1	
233	1	
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249	1	
250	1	
251	1	
252	1	
253	1	
254	1	
255	1	
256	1	
257	1	
258	1	
259	1	

Reach: 25																	
	umber: 3C				-				_								
	Ves	getation spec	cies				Class Cover					<u> </u>	Ground Cov	ı ver Materi	al		
	.5	<u> </u>															
	Arnafanthus fetrofiekus Oci	entalis	٠.	+anthum stri	arium								Coarse Moods	debris			
	usier, oci	dente dive gra	Pohisound	?· ¿'\'	iu.		.Q.				ROCKICOODIE		ody	10			
	anthe anial	ative	ORUM	'ailla'		.0,	Monnative Both	Mobiant			(CODE	Leaf Litter	eno			concrete	
Pooding no	arnate cutho	oon, i.	OONES	43nth.		Mative	Morring Both	40 P/C		Bare	30CKI	, est V	COars	water	mud	conclu	
260	Y V	<u>``</u>	Y	7	-		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1		V	4	<u> </u>		7-	1	C	
261					-			1	-						1		
262					-			1	_						1		
263					-			1	_						1		
264					•			1							1		
265					-			1	_						1		
266								1	_						1		
267					-			1	-						1		
268								1							1		
269								1	_						1		
270								1	_						1		
271								1	_						1		
272								1	_						1		
273								1	-						1		
274								1	_						1		
275					-			1							1		
276					-			1	_						1		
277								1							1		
278					-			1							1		
279 280					-			1							1		
281					-			1	-						1		
282								1	-						1		
283								1							1		
284								1	-						1		
285					-			1	-						1		
286								1	-						1		
287								1	-						1		
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289								1							1		
290								1							1		
291								1							1		
292								1							1		
293								1							1		
294								1							1		
295								1	_						1		
296								1							1		

Vegetation spaces Class Cover Ground Cover Material	Poach: 25						_			_							
Close Cover Close Cover Close Cover Cround Crown Material Crown Material Crown Material Close Cover Close Cover Crown Material Crown Materi	Reach: 25																
	i ransect N							Clara C					0		1		
298		V	egetation speci					Class Cover					Ground Cov	er Materia	11		
298	Reading pe	Arnafarithus fetrofilekus	scidentalis	PolyBolini sp.	. Yanthum stri	inatium .	Native	Nourrative Both	NO Plant	Bate	ROCHLCODDIE	Leaf Littled	coarsemoody	dedis water	roud	concrete	
298	297								1					1			
300 301 301 303 303 304 305 305 306 307 307 308 307 308	298													1	_		
301														1	<u> </u>		
302														1			
302 303 305 3														1			
304 305 306 1														1	<u> </u>		
305														1	<u> </u>		
306														1	<u> </u>		
307														1			
308									1					1			
309					1		1							1			
310			1	1				1						1	_		
311							1							1			
312		1					1							1			
313	311	1					1							1			
314	312		1 1					1						1			
315	313			1				1						1	L		
316	314			1				1						1			
317	315		1				1							1			
318	316				1		1							1			
319	317		1		1			1						1	L		
320	318		1		1			1						1			
321	319	1					1							1			
322 1	320	1		1				1						1			
323 1	321		1					1						1			
324	322		1	1				1						1			
325 1	323		1 1					1						1			
326	324			1				1						1	L		
327 1 1 1 1 328 1 1 1 1 329 1 1 1 1 330 1 1 1 1 331 1 1 1 1 332 1 1 1 1	325		1		1		1							1	L		
327 1 1 1 1 328 1 1 1 1 329 1 1 1 1 330 1 1 1 1 331 1 1 1 1 332 1 1 1 1	326			1				1						1	L		
329 1 1 330 1 331 1 332 1							1									1	
329 1 1 330 1 331 1 332 1			1				1									1	
330 1 331 1 332 1			1	1				1								1	
331 1 332 1			1				1									1	
332 1 1 1				1	1			1								1	
			1					1									
				1				1									

Reach: 25																						\Box
Transect Nur	mber: 3C						-															
	"	Ve	egetation	specie	2S				Clas	s Cover				1		G	round Cove	r Materia				
Reading pe	Amafanthus re	troflexus	ccidentalis nonnati	ne di ass	OMBOUTURS SO.	hium str	Imarium	Wative	Monnative	Both	Hoby	ant	\$ ³ ¢e	ROCHICODO	e Leaflith	>	Coarse moody	water .	mud	concrete		
334				1			_			1										1		
335			1				_	1												1		
336					1					1										1		
337				1		1	-				1									1		
338	1		1				-	1												1		
339			1	1			_				1									1		
340	1			1			_				1									1		
341					1		_			1										1		
342				1			_			1										1		
Totals	9	1	1	12	12	7	-	13	1	2	11	306	0		0	0	0	326	1	.6	0	
							-	Total Class Native non-native no vegetat		7.017 6.725 89.47	146											
							-															\dashv

Total Class Cover Percent Average for 25-4A,B, and C:

Native 44.88667 non-native 19.11 no vegetation 40

Reach: 25										
Transect Number: 4A			_		-					+
Transect Namber: 470	Vegetatio	on species	-	Class Cover			Ground Co	ver Materia		
			_	Glass cove.						
Reading pe Ambrosia psilostaci	ithania occidentalis	non-native stass Raphanus sativus Typhasa.		Wative Wornative 80th Worlant	Bate	Rock(Cobble Leaflix	gei coarse mood	water	mud ungouted i	101.20
		1	_	1					1	
2		1	_	1					1	
3		1	_	1					1	
4		1	_	1					1	
5		1	_	1					1	
6		1		1					1	
7		1		1					1	
8		1	_	1					1	
9		1	-	1					1	
10		1	_	1					1	
11	1		_	1					1	
12	1		_	1					1	
13	1		-	1					1	
14	1		_	1					1	+
16	1		-	1	-				1	+
17	1		-	1	-				1	
18	1		-	1					1	+
19	1		_	1					1	+
20	1			1					1	+
21	1		_	1					1	
22	1		_	1					1	
23	1			1					1	
24	1			1					1	
25	1			1					1	
26	1			1					1	
27	1			1					1	
28	1			1					1	
29	1			1					1	
30	1		_	1					1	
31	1		_	1					1	
32	1		_	1					1	
33	1		_	1					1	+
34	1		_	1					1	+
36	1			1	-				1	+
37	1		-	1	-				1	+
38	1		_	1	-				1	+
30	1			1					1	

Reach: 25																	
Transect Number: 4A	Δ								_								
Transect Ivamber: 47		Vegetatio	on species				Class Cov	er					Gro	und Cov	er Materia		
	.20	.6					0.033 001		_								
Reading pe Arrorosia o	silostathya	Jdentalis Legidum latif	non-native grass	Manus satinus	ugso.	Native K	Monnative 80	in kolisir		&ate	ROCKLOY	Jole Leaf	iktet Cos	arse woody	debis uniter	nud	ungtoned riprop
39	1					1										1	
40	1					1										1	
41	1					1										1	
42	1					1										1	
43	1					1			_							1	
44	1					1										1	
45 46	1					1			-				1			1	
46	1	1			-	1	1		-	-			1				
48	1		-			1	1		-				1				
49	1		1			1		1	-				1				
50		•	1				1	1					1				
51			1				1		_				1				
52			1				1						1				
53			1				1						1				
54			1				1						1				
55		1	. 1				1						1				
56		1	. 1				1						1				
	1	1	_					1					1				
58			1				1						1				
59			1				1		_				1				
60			1				1		_				1				
61		1	1				1						1				
62 63		1					1		-				1				
64		1		1			1			-			1				
65		1		1	-		1						1				
66		1		1			1						1				
67		1		1			1						1				
68				1			1						1				
69		1		1			1						1				
70		1					1										1
71		1					1										1
72									1								1
73									1								1
74									1								1
75									1								1
Totals	1 38	13	14	6	10	47	22	2	4		0	0	24	0	0	45	6

Reach: 25												
Transect Number: 4A												
Vegetation species		Class	Cover		_				Ground Cov	ver Materia	ıl .	
Reading pe Ambrosia psilostachya occidentalis nonnative glass Raphanus sativus Reading pe Ambrosia psilostachya legidium latiduum	Wative	Horriditive	BOKI	Modiant		\$8ª€	ROCHICOBORE	Leaf Littled	Coarse moods	uated unated	rrud	ungrouted riprop
	Total Clas	s Cover:										
	Native		65.33333									
	non-nativ	e	32									
	no vegeta	ntion	5.333333									

Reach: 25												
Transect Number: 4B									=		-	
Transcer variable. 45		Ves	getation spe	cies					_	Class Cover	-	Ground Cover Material
		-,	,		175/80				_		-	
				as Edinor day	,0,							
2				inochic				2				
Reading pe Kribrosia atarihicatra ketabulatus Comyra carradensis Luftania oʻc	otalis	S		(ECHI)		,	speratally sp	Kanthum str	atium			Base Rock Louble Leaflitter Coase mooth details Rud gard Interoried in the
acanthican takes angularis addresis	relighthus o	UUIL 12	۶ ۸	855° (S	kadyayıng edi	Scirpus califor	rice sp		Jirria.			Bare Rock Cothe Lea Litter Coase mood debter Roud sand Interdict interded
Reading pe Mithodia acc Aster subular Mithoter transition Comparation Comparat	' 'NUS'	nue neliotis alb	, ine &	MIM?	. aus 50	calife	olus	Met		Native Morrative Both Moplant		Base Rocal Colore restricted Coases model to Line Colored in the Colored Color
abro rets riple and the	aliant.	alilota	an nat	MEON	ohall	irpus	agrobe	arthil		Rative Hornative Both Ho Plant		Bare Rocklo Estric Cootse negative Lind Sold libration.
Reading pe	He	Me	40.	80.	60,	S.	८५	40.	_	70, 70, 80, 70		80, 60 to 10, 10, 40, 40, 120, 120,
1						1			_	1	_ ,	
2						1			_	1	-	
3 4						1			_	1	-	
5						1			_	1	-	
6						1			_	1	-	
7						1				1		
8						1				1		1
9						1				1		1
10			1							1		1
11						1				1		1
12						1				1		1
13						1				1		1
14						1			_	1	_ ,	
15	1					1			_	1	_	
16 17	1		1			1			=	1	-	
18	1	<u>.</u>	1			1			_	1	-	
19	1		1					1	=	1	-	
20	1							1	-	1	-	
21								1		1	_	1
22								1	=	1	=	1
23				1				1	-	1	-	1
24								1	_	1		1
25						1		1	_	1	_	1
26						1		1	_	1		
27						1			_	1	-	
28 29						1	1	1	_	1	-	
							1		_	1	-	
30 31							1		-	1		
32							1		-	1		
33							1			1		1
34						1				1		1
35 1						1				1		1
36 1										1		1
37 1										1		1
38 1										1		1
39 1 1	-									1		1
40 1								1		1		
41 1 1 1 1										1 1	-	
	-								-	1	-	
43 1 1									-	1		
45 1 1									-	1		
46										1	-	
47										1	-	
48 1										1		
49 1	1									1		1
50 1 1								-		1		1
51										1		

Reach: 25												T	
Transect Number: 4B							-					+	
Transect Number: 4b			Vegetation species				-	Class Cover		Ground Cover N	/atorial		
Reading pe Ambrosia atah ketersubulatus ketiplek translulatis Contra Canada See See See See See See See See See Se	densis occident	kalis Bilanthus and	inatholistusi	sirdis califo	rnica Sparadalus s	tanthun str	grafium	2.	No black	Bare RoulColdle Leaf Little! Coase woody about the water	nud	sand	ungotted riptap
52							-		1			1	
53									1			1	
54									1			1	
55	+								1			1	
56							-		1			1	
57	+		1				-		1			1	<u>T</u>
58			1				-	1		1			
59 60			1					1				+	
61			1					1		1		+	
							-	1		1		+	
62 63	+		1				-	1		1		+	+
64 1	+		1				-	1	1	1		+	+
65 1	+		1				-	1	1	1		+	+
66 1	+		1 1				-	1	1	1		+	+ + + + + + + + + + + + + + + + + + + +
67			1					1		1		+	-
68			1				-	1		1		+	
69 1			1				-	1	1	1		+	
70			1				-	1		1		+	
71 1	+ +		1					1	1			+	1
72 1	+ +							1				+	1
73 1	+ +							1					1
	1							1				1	1
75									1			1	1
Totals 7 3 10 1	1 4	5	9 3 1 6	22	. 5	10		45 12 7	7 11	1 0 14 0	4 41	1 10	0 5
								Total Class Cover:					
								Native 69.33333					
								non-native 25.33333					
								no vegetation 14.66667	7				

Reach: 25													
Transect Nu	ımber: 4C												
Veg	etation species		Class	Cover					Ground Co	ver Material		1	
	·									:5			
									coarse mood	depli			
			_				, se		80	,40			
			Monnative		Mobiant		ROCH/CODIE	:xtel	o MOS			concrete	
L		Mative	Onthe	BOTH	'Objo.	Bale	CKIC	atli	adise	water	mud	nicie	
Reading per	r foot:	42,	4,	Ø.	4,	₽ °	Se.	, v	C	111	4,	C.	
1					1					1			
2					1					1			
3					1					1			
4					1					1			
5					1					1			
6					1					1			
7					1					1			
8					1					1			
9					1					1			
10					1					1			
11					1					1			
12					1					1			
13					1					1			
14					1					1			
15					1					1			
16					1					1			
17					1					1			
18					1					1			
19					1					1			
20					1					1			
21					1					1			
22					1					1			
23					1					1			
24					1					1			
25					1					1			
26					1					1			

Reach: 25													
Transect Nu	mber: 4C												
	etation species		Class	Cover	-		I.		Ground Co	ver Material			
										٠,٢			
										depris			
							\e		80	.40			
			Monnative		Mobiant		Rock/Cobble	:x ^{xel}	MOC			concrete	
_		Wative	, on the	BOTH	· Obla.	Bale	CKIC	afile	arse	water	mud	ncre	
Reading per	foot:	40	40	80	40	80	80	ve	Coarse mood	110	44,	S.	
27		_			1					1			
28					1					1			
29					1					1			
30					1					1			
31					1					1			
32					1					1			
33					1					1			
34					1					1			
35					1					1			
36					1					1			
37					1					1			
38					1					1			
39					1					1			
40					1					1			
41					1					1			
42					1					1			
43					1					1			
44					1					1			
45					1					1			
46					1					1			
47					1					1			
48					1					1			
49					1					1			
50					1					1			
51					1					1			
52					1					1			

Reach: 25														
Transect N	umber: 4C													
	getation spec	cies		Class	Cover	1				Ground Co	ver Material			
	,										,5			
											repur			
								<u>.</u> e		80	10			
				Monnative		NO Plant		Rock/Cobble	ixter	NOC			concrete	
	_		Mative	onthe	BOTT	bla.	Bate	CKIC	afile	arse	water	mud	ancre	
Reading pe			40	42	80	42	80	80	ve	Coatse mooth	710	41,	S.	
53						1					1			
54						1					1			
55						1					1			
56						1					1			
57						1					1			
58						1					1			
59						1					1			
60						1					1			
61						1					1			
62						1					1			
63						1					1			
64						1					1			
65						1					1			
66						1					1			
67						1					1			
68						1					1			
69						1					1			
70						1					1			
71						1					1			
72						1					1			
73						1					1			
74						1					1			
75						1					1			
76						1					1			
77						1					1			
78						1					1			

Reach: 25														
Transect Nu	ımber: 4C	-												
Veg	etation specie	es		Class	Cover					Ground Co	ver Material			
	·	-									:5			
	_										depris			
	_							.se		coarsemood	40			
	_		•	Monnative		NO Plant		Rock/Cobble	:xtel	o NOC			concrete	
L			Mative	'ou.ur	BOTT	'Objo	\$ate	CKI	atli	- Odise	water	mud	mile	
Reading per		-	4,	4,	8.	4,	ذ	80	V	C	112	4,	O.	
79		-				1					1			
80						1					1			
81						1					1			
82		-				1					1			
83		-				1					1			
84		-				1					1			
85		-				1					1			
86						1					1			
87						1					1			
88						1					1			
89		-				1					1			
90		_				1					1			
91		_				1					1			
92		_				1					1			
93		_				1					1			
94						1					1			
95						1					1			
96						1					1			
97						1					1			
98						1					1			
99						1					1			
100						1					1			
101						1					1			
102						1					1			
103						1					1			
104						1					1			

Reach: 25										
Transect Number: 4C										
Vegetation species		Class Cover					Ground Co	ver Material		
<u> </u>								35		
								depriv		
					, se		Coarse mooth	40		
		Potti	NoPlant		Rock/Cobble	itles	° noc		concrete	
	Native Non	rnio Both	10 Plo	Bare	CKI	est !	coarse	water mud	, micro	
Reading per foot:	4, 4,	φ.	4	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	Ke	<u> </u>	C	<i>h</i> , <i>u</i> ,	C C	
105	_		1					1		
106	_		1					1		
107			1					1		
108			1					1		
109			1					1		
110			1					1		
111			1					1		
112			1					1		
113			1					1		
114			1					1		
115			1					1		
116			1					1		
118			1					1		
120			1					1 1		
121	_		1					1		
122			1	-				1		
123			1					1		
124			1					1		
125			1					1		
126			1					1		
127			1					1		
128			1					1		
129			1					1		
130			1					1		
130			4							

Reach: 25												
Transect Number: 4C				-								
Vegetation species		Class Cover		-				Ground Co	ver Material			
vegetation spe		Class Cover		-					.6			
									repuls			
		_				\e		30	30			
		ative	No Plant			Rock(Cobble	.xtel	NOC			concrete	
	Native ,	Mouris Both	Sla.		Bare	20x/C	aflic	arse	water	mud	ncie	
Reading per foot:	40 6	Monnative Both	40		80	80	Ver .	Coatse mooth	No	u,	So.	
131			1						1			
132			1						1			
133			1						1			
134			1	-					1			
135			1						1			
136			1						1			
137			1	_					1			
138			1						1			
139			1						1			
140			1						1			
141			1						1			
142			1						1			
143			1						1			
144			1						1			
145			1						1			
146			1						1			
147			1	_					1			
148			1						1			
149			1						1			
150			1						1			
151			1						1			
152			1						1			
153			1	-					1			
154			1	_					1			
155			1						1			
156			1						1			

Reach: 25													
Transect Num	ber: 4C												
Vegeta	ation species		Class	Cover					Ground Co	ver Material			
	<u> </u>									:5			
										depli			
							, se		Coarse mooth	40			
			Wornalive		Mobiant		ROCKICODDIE	itler	° noc			concrete	
		Mative	Onthe	BOTH	10 b/s	Bate	CKI	all	coarse	water	mud	nice	
Reading per fo	oot:	4,	4	Ø.	4	Ø.	4°	V	C	"	4,	C	
157					1					1			
158					1					1			
159					1					1			
160					1					1			
161					1					1			
162					1					1			
163					1					1			
164					1					1			
165					1					1			
166					1					1			
167					1					1			
168					1					1			
169					1					1			
170					1					1			
171					1					1			
172					1					1			
173					1					1			
174					1					1			
175					1					1			
176					1					1			
177					1					1			
178					1					1			
179					1					1			
180					1					1			
181					1					1			
182					1					1			

Reach: 25												
Transect Number: 4C												
Vegetation species		Class (Cover					Ground Co	ver Material			
regetation spe		0.035	3010.						.6			
									repuls.			
		_				\e		8	40			
		Monnative		MORIANT		Rock(Cobble	.xter	NOO			concrete	
	Mative	Onthe	BOTH	blg.	Bare	CHIC	atille	arse	nater	mud	ncre	
Reading per foot:	H _c	40	80	40	80	80	Ve .	Coarse mooth	7/2	41,	S.	
183				1					1			
184				1					1			
185				1					1			
186				1					1			
187				1					1			
188				1					1			
189				1					1			
190				1					1			
191				1					1			
192				1					1			
193				1					1			
194				1					1			
195				1					1			
196				1					1			
197				1					1			
198				1					1			
199				1					1			
200				1					1			
201				1					1			
202				1					1			
203				1					1			
204				1					1			
205				1					1			
206				1					1			
207				1					1			
208				1					1			

Reach: 25													
Transect Num	ber: 4C												
	ation species		Class	Cover				<u>I</u>	Ground Cov	ver Material		<u>I</u>	
	<u> </u>									:5			
									coarse mooth	deply			
							, se		60	40			
			Wornative		MO blant		Rock/Cobble	:xtel	2 NOC			concrete	
		Mative	Onthe	BOTH	'Objo	Baie	CKIC	atli	- Oakse	, atel	mud	oncre	
Reading per fo	oot:	420	42	80	42	80	80	Ve .	C	140	41.	S.	
209					1								
210					1					1			
211					1					1			
212					1					1			
213					1					1			
214					1					1			
215					1					1			
216					1					1			
217					1					1			
218					1					1			
219					1					1			
220					1					1			
221					1					1			
222					1					1			
223					1					1			
224					1					1			
225					1					1			
226					1					1			
227					1					1			
228					1					1			
229					1					1			
230					1					1			
231					1					1			
232					1					1			
233					1					1			
234					1					1			

Reach: 25						
Transect Number: 4C						
Vegetation species	Class Cover		<u> </u>	Ground C	over Material	
Reading per foot:	Native Norvative Both Norvati	8at	e Rock/Cobbe	Leaflitter Coarse mos	uater nud	concrete
235	1				1	
236	1				1	
237	1				1	
238	1				1	
239	1				1	
240	1				1	
241	1				1	
242	1				1	
243	1				1	
244	1				1	
245	1				1	
246	1				1	
247	1				1	
248	1				1	
249	1				1	
250	1				1	
251	1				1	
252	1				1	
253	1				1	
254	1				1	
255	1				1	
256	1				1	
257	1				1	
258	1				1	
259	1				1	
260	1				1	

Reach: 25							
Transect Number: 4C							
Vegetation species	Class Cover		li .	1	Ground Cov	ver Material	
Reading per foot:	Native Norvative Both Norvati	8	ate .	ROCH Copple	Coatse model	dedris mud	ancrete
261	1					1	
262	1					1	
263	1					1	
264	1					1	
265	1					1	
266	1					1	
267	1					1	
268	1					1	
269	1					1	
270	1					1	
271	1					1	
272	1					1	
273	1					1	
274	1					1	
275	1					1	
276	1					1	
277	1					1	
278	1					1	
279	1					1	
280	1					1	
281	1					1	
282	1					1	
283	1					1	
284	1					1	
285	1					1	
286	1					1	

Reach: 25						
Transect Number: 4C						
Vegetation species	Class Cover		1	Ground	Cover Material	
Reading per foot:	Mative Monnative Both Moplant	8 ³⁴	e gok/Coble	, leaflither Coarse	noody depris	concrete
287				<u> </u>	1	
288					1	
289					1	
290					1	
291	1				1	
292	1				1	
293	1				1	
294	1				1	
295	1				1	
296	1				1	
297	1				1	
298	1				1	
299	1				1	
300	1				1	
301	1				1	
302	1				1	
303	1				1	
304	1				1	
305	1				1	
306	1				1	
307	1				1	
308	1				1	
309	1				1	
310	1				1	
311	1				1	
312	1				1	

Reach: 25												
Transect Number: 4C												
Vegetation species		Class Co	over	I.				Ground Cov	er Material		<u>I</u>	
<u> </u>									:5			
								coarse mooth	deply			
						, se		65	\			
		Monnative .		Modant		Rock/Copple	ixter	² NOC	_		concrete	
	Mative	onthe	Both	'Obja	Bate	CAYL	ath	agrise	ater	mud	oncre	
Reading per foot:	42	42 (8°	42	80	Ø.	V ^e	C	111	4,	υ U	
313				1								
314				1					1			
315				1					1			
316				1					1			
317				1					1			
318				1					1			
319				1					1			
320				1					1			
321				1					1			
322				1					1			
323				1					1			
324				1					1			
325				1					1			
326				1					1			
327				1					1			
328				1					1			
329				1					1			
330				1					1			
331				1					1			
332				1					1			
333				1					1			
334				1					1			
335				1					1			
336				1					1			
337				1					1			
338			_	1		_			1			

Reach: 25											
Transect Number: 4C											
Vegetation species		lass Cover					Ground Co	ver Material			
vegetation species		1033 60161						.6-			
							Coatse mooth	Lebris			
					\e		30	40			
	Matine Mouris	ine	NoPlant		Rock/Cobble	, xter	NOC			concrete	
	Matine Mouris	BOTT	Sha.	Bate	ackilo	afile	arse	water	mud	ncies	
Reading per foot:	40 40	\$0	40	8,0,	80	Se.	CO.	1/10	We	G,	
339			1					1			
340			1					1			
341			1					1			
342			1					1			
343			1					1			
344			1					1			
345			1					1			
346			1					1			
347			1					1			
348			1					1			
349			1					1			
350			1					1			
351			1					1			
352			1					1			
353			1					1			
354			1					1			
355			1					1			
356			1					1			
357			1					1			
358			1					1			
359			1					1			
360			1					1			
361			1					1			
362			1					1			
363			1					1			
364			1					1			

Reach: 25												
Transect Number: 4C												
Vegetation species		Class	Cover					Ground Cov	ver Materia		1	II.
Reading per foot:	Wative	Nornative	\$o ^{ti}	No Plant	&ai€	Rock Copple	ealitter	Coatse mood	debis uster	mud	concrete	
365	`	`	•	1			•		1			
366				1					1			
367				1					1			
368				1					1			
369				1					1			
370				1					1			
371				1					1			
372				1					1			
373				1					1			
374				1					1			
375				1					1			
Totals 0	0	0	C	375	0	0	0	0	375	0	0	
	Total Class C	Cover:										
	Native		C)								
	non-native		C)								
	no vegetatio	n	100)								

Reach: 96								
Transect Number: 1								
	Vegetation spe	ecies		Class Cover		Ground Co	ver Material	
Reading pe Arternisia doublasiana Cardius Art	719		Sonchus oleraceus Watine	Montative Both Moplant	&ste	ROCH COPIE ROCK		şand
1 2 3 4 5 6 7	1 1 1 1 1	1 1 1 1 1 1 1	1	1 1 1 1		1 1 1 1 1 1 1		
8 1		1	1	1		1		
9 10 11 1		1 1 1	1	1		1 1 1		
12 13		1 1	1			1 1		
14 1 15 1		1		1		1 1		
16 1 17	1 1	1		1 1		1		
18 19	1	1	1	1		1		1
20 21	1	1	1	1				1
22	1	1		1				1
23 24	1	1 1	1	1				1 1
25 26	1 1	1 1		1 1		1 1		
27 28 1	1 1			1 1		1 1		
29	1 1			1		1		
31 32	1 1			1			1	
33				1	1		1 1	
34 35				1	1		1	
36 37		1 1 1		1 1			1 1	
38 39	1	1 1		1			1	
40	1	1		1			1	
41 42	1 1	1 1		1	-		1 1	

Reach: 96												
Transect Number: 1												
	Vegetation species			Class Cover			·	·	Ground Co	ver Materia		·
Reading pe Arternisia doublasiana Carduus Art	nocenhalus Ficus carica Parthenocissus quinque folia Phacelia lanoisistina Rorippa nasti	urtum advaitum Sahi laevikata Schinus terebintiiholius Sonchus diera	sce ^{us}	Native Norvative Both	Mo blant		safe Rockly	oldhe Leaf Litter	Coarse mood	ydeloris water	nud	zand
43	1	1		1	-				1			
44	1	1		1					1			
45	1	1		1	-	_					1	
46	1	1		1	-						1	
47	1	1		1	-				1			
48	1	1		1		_			1			
49	1	1		1		_			1			
50	1	1		1		_			1			
51	1	1		1		_	1					
52	1	1		1		_	1					
53	1	1		1	-	_	1					
54	1	1		1	-	_			1			
55	1	1		1	-	_	1					
Totals 1 5	5 1 36 0 3	44 2 1		8 6 37	4	-	4	0 3	31 0	9	5	6
				T		-						
				Total Class Cover:		-						
				Native 81.81818		-						
				non-native 78.18182		-						
				no vegetation 7.272727		_						
						_				1		
						-						
						_						

Reach: 96											
Transect Number: 2											
	Vegetation species				Class Cover				Ground Cover Material		
Reading pe Neilotus aloa Pathenoissus quinquetolio		Whasa. tour	um stumatum	Wative	Morrative Both Mortan	Ç.	Baie Rock/Cobble		y debris		grouted riot an
1 2						1					1 1
3						1					1
4						1					1
5						1					1
6						1					1
7						1					1
8 1					1						1
9 1					1	_		1			1
10 1 1					1	-		1			
12 1					1	_		1			
13 1					1			1			
14 1	1				1			1			
15 1	1				1			1			
16 1					1			1			
17 1	1	L			1			1			
	1 1				1			1			
19 1	1 1	L			1			1			
20 1					1			1			
21 1					1	_		1			
22 1					1	_		1			
23 1 24 1	1	1			1	_		1	1		
25 1	1	1			1	_			1		
26		1			1				1		
27		1		1					1		
28		1		1						1	
29		1		1						1	
30		1		1						1	
31		1		1						1	
32		1		1						1	
33		1		1						1	
34		1		1						1	+
35		1		1						1	+
36		1		1						1	
38		1	1	1 1						1	
39		1		1						1	
40		1		1						1	
41		1		1						1	
42		1		1						1	

Reach: 96																	
Transect N	umber: 2																
			Vegetation	n species					Class Cover						Ground Cover Ma	terial	
Reading pe	Mellotusab	Parthenoissus quinque ethio	de ⁵ Rojipa nasturi	Salix laside pis Sonchus de	Who so.	tanthum str	lmaium	Wative	Monnative Both	Mo bra	Ķ.		Base Rosylcop	je Leaflittet	Coatse mody debris	mud	grouted liptan
43				1			_	1					1				
44				1			_	1						1			
45				1				1						1			
46				1			_	1						1			
47				1			_	1						1			
48				1			_	1						1			
49				1			_	1						1			
50				1			_	1						1			
51											1						1
52							_				1						1
53											1						1
54							_				1						1
55											1			1			
Totals	16	2	1 1	12 2	2 19	1	-	24	12	7	12	_	1	7 15	0	4 1	5 13
							-	Total Class	Cover:			_					
								Native	56.3	6364		_					
							-	non-native		4545		-					
							_	no vegetati		1818							

Reach: 99												
Transect Number: 1												
Vegetation species		Class Cover		_				Ground Cover Ma	aterial			
Reading pe Redera Reit 1	Matine Mo	And the Both	Mohigur		baile	Rock/Coldie	e Leaflittet	abis		çand	concrete	
1 1		1					1					
2			1				1					
3			1	_			1					
4			1			1	1					
5			1	_						1		
6			1	_			1					
7			1	_			1	+				
8			1	_			1	+				
9			1				1					
10			1								1	
Totals 1	0	1	0 9	_		0 1	1 7	0	0	1	1	
	Total Class Cove	er:		_								
	Native		0									
	non-native		10									
	no vegetation		90									

Transect Number: 2 Vegetation species Class Cover Ground Cover Material	Reach: 99																		
Vegetation species		umber: 2										=							
Reading pe spetitus delibration for the perfect of				Veg	etation spe	ecies				Class Cove	r	_			Grou	nd Cover M	aterial		
1				• 05		20.03				0.033 0010	·	_			0.00	100000	ateriai		
1	Reading pe	adenia codit	olia Arundo donat Chenopoli	Cherneso.	Nicotiana aka	uca nonnative gri	kojippa nasturtium a	Haaritimus	Native	Norvative Both	, No plant		& _{Me}	Rock(Cobble	leaf litter	Coarsemood	y debris	mud	
3	1	1		1						1		_				_			
A	2					1				1									
S	3			1						1					_				
Control Cont	4			1 1						1					1				
Total Class Cover Tota	5		1	1 1						1									
Note	6			1						1									1
Native Sign	7						1				1								1
10	8		1				1				1						:	1	
11	_		1				1				1						:	1	
12	10		1					1			1								1
13								1		1					1				
14	12							1		1			1						
15	13							1		1			1						
16	14				1					1					1				
17					1					1					1				
18	16				1					1					1				
19	17										1	L			1				
20	18										1		1						
Totals 5 4 3 3 1 3 4 3 9 4 4 5 3 0 11 0 2 4 5 6 5 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	19										1				1				
Total Class Cover:	20										1				1				
Native 35 non-native 65	Totals		5	4 3	3	1	3	4		3 9	4 4	1	3	0	11			2	4
Native 35 non-native 65																			
Native 35 non-native 65									Total Cla	ss Cover:									
non-native 65											35								
									non-nati	ve									

Reach: 99												
Transect Number: 3						-						
Transect Number: 3				6		_			Cuanuad Ca			
			C	ass Cover		-			Ground Co	ver Material		
Reading pe & Alabium dii	atum Polygonum amphibium Rorippa nasti	ntium aquaticum Nativ	e Wonday	No.	WO Plant		Bate	ROCHICODOR	Leaf Litter Coarse mood	Mater mud	concrete	
1	1 1				1	-					1	
2 1	1 1				1						1	
3	1 1				1						1	
4	1		1			_				1		
5	1 1				1					1		
6	1		1							1		
7	1		1							1		
8	1		1							1		
9	1		1							1		
10	1		1			_				1		
Totals 1	4 10	_	6	0	4 0	-	0	0	0 0	7	3 0	
		Tota	l Class Cover:			-						
		Nativ		10	0	-						
			native	4		-						
			egetation		0	-						
		110 V	Secution	'		-						
						-						
						-						
						-						

Reach: 100								
Transect Number: 1			_					
Transect Number. 1	Class C	`ovor				Ground Co.	ver Material	
	Class C	Jovei				Ground COV	vei iviatellal	
Reading pe Redera Relit Romanative Blass Parthenocies Le quinque folia 1 1 1 1	Native Nonnative	Both No Plant	Bate	e Rock(Copple	leaf litter	Coarsemood	debris mud	concrete
1 1 1		1			1		7	
2 1 1		1			1			
3 1 1		1			1			
4 1 1		1			1			
5 1 1		1			1			
6 1 1		1			1			
7 1	1	_			1			
8 1	1			1	_			
9 1	1				1			
10 1	1				1			
11 1	1				1			
12 1	1			1				
13 1	1			1				
14 1	1			1				
15 1	1			1				
16 1	1			1				
17 1	1						1	
18 1 1		1					1	
19 1	1						1	
20 1	1						1	
21 1	1						1	
22 1	1						1	
23 1	1						1	
24 1	1						1	
25		1					1	
26		1					1	
27		1					1	
28		1					1	
29		1					1	
30		1					1	
31		1		1				
32 1	1			1				
33		1		1				
34		1		1				
35 1	1				1			
36 1	1				1			

Reach: 100															
Transect N															
					Class	Cover						Ground Cov	ver Material		
Reading pe	Hedera helit non-native ?	gass Parthenoissus quinquefolia		Mative	Morrative	POH	No Plant		Bate	ROCKICODOR	Leaf Littled	Coatse mood	udebris d	nud	concrete
37	1				1			_			1				
38	1				1						1				
39	1				1						1				
40	1				1						1				
Totals	12 1	1 24	1	17	7	7	9	_	6	4	16	0	9	5	0
			-	Total Class	Cover:										
			_	Native		60)	_							
				non-native		35	5	-							
				no vegetat	1	22.5	5								
						_									
1															

E-2 POST-CLEARANCE TRANSECT DATA

Reach: 1								
Transect Number: 1								
Vegetation sp	pecies	Class Cover			Ground Co	ver Material		
	grass Richus communis Saliklasioleois cross Mature	2						
	_	*(e _{E2} ,						
	⁹ /U*							
	Mac							.6
	is it's doss							<i>setris</i>
	gras, armin saje					\e	284	
155P Zine	scoll asiale.	ative		ant.		icoloti ret	MOC	
Vegetation CVPErUSSP. ROR-Rative	gass Ricinus communis Salix lasiolepis cross tr	Native Nonnative	Both	MoPlant	Bare	ROCHICODOIR REALITEET	logise mooth	water mud
Vegetation CVV (OT)	\(\text{\$\ext{\$\exitt{\$\exitt{\$\ext{\$\exitt{\$\ext{\$\ext{\$\exitt{\$\ext{\$\ext{\$\ext{\$\exitt{\$\exitt{\$\ext{\$\ext{\$\exitt{\$\ext{\$\exitt{\$\ext{\$\exitt{\$\exitt{\$\ext{\$\ext{\$\ext{\$\exitt{\$\exitt{\$\ext{\$\exitt{\$\ext{\$\exitt{\$\ex	4	Ø.	7	⊗ °	K	0	2 6.
1		-				1		
3	1	1				1		
	1	1				_		
	1 1 1 1	1	1		<u> </u>	1		
6	1 1		1			1		
	1 1		1			1		
	1 1		1			1		
	1 1		1			1		
	1 1		1				1	
	1 1		1				1	
12	1	1	_				1	
13	1	1					1	
14	1	1					1	
15	1	1					1	
16	1	1				1		
17	1	1				1		
18	1	1				1		
19	1 1		1			1		
20	1 1		1			1		
21	1	1				1		
22	1	1				1		
23	1	1				1		
24	1	1				1		
25	1	1				1		
26 1	1		1			1		
27 1	1		1			1		
28 1	1		1			1		
29	1	1						1
30	1	1						1
31	1	1						1
32	1	1						1
33	1	1						1
34	1	1						1
35	1	1						1

Reach: 1													
Transect Number: 1			_										
	etation spe	ries	_	Class Cover			Ground Cov	ver Material					
Vege	ctation spc	cics	_	Class Cover			Ground Co	ver iviaterial					
Vegetation Cyperus 59.	non-native est	ass Ricinus communis	Jolegis cross Mature	Mees, Mouriagine		ant		Rock/Colobie less	.xte ^t	coarse moody	debris		
Vegetation Cyper	NON-II	Ricinia Salitie		Mative Monnati	Both	No Plant	Bare	ROCKI Lest	litter	coarse	water	rnud	
36			1	1							1		
37			1	1							1		
38			1	1							1		
39			1	1							1		
40			1	1							1		
41			1	1								1	
42			1	1					1				
43			1	1					1				
44			1	1					1				
45			1	1					1				
46			1	1					1				
47			1	1					1				
48			1	1					1				
49			1	1					1				
50 1			1		1				1				
51			1	1					1				
52			1	1					1				
53			1	1					1				
54			1	1						1			
55			1	1						1			
56	1		1		1				1				
57	1		1		1				1				
58	1		1		1				1				
59	1		1		1				1				
60	1		1		1				1				
61	1		1		1				1				
62	1		1		1				1				
63			1	1						1			
64			1	1						1			
65			1	1		_				1			
Totals 4	16	2	64	44 1	20	0	0	0	41	11	12	1	0
				Summari.		Dorcost							
				Summary Total Native Class Cov	or	Percent:							
				Total Native Class Cov	er	98.46154							

Reach: 1														
Transect Number: 1														
Vegetation spe	cies			Class Cove	r			Ground Co	over Materia					
Vegetation Cyperus 59.	es Ricinus confr	Junis Salix lasidedis	toss Individes	Rolling	Worklative		Mo Plant	Bate	ROCHLOODIE	ea liitet	coarse mood	debits water	mud	
				Total Non-		Cover	32.30769							
				Total Unve	getated		0							

Reach: 2		_				
Transect Number: 1						
		Class Cover		Ground Co	ver Material	
		^				
	glass Pracelia ramosissima Pantago major Toxicodentron diversitotur	1		8ale	1	mud water with Lemma sp.
2 1		1			1	
3 1		1			1	
4	1		1		1	
5	1	_	1		1	
0 7	1		1		1	
7	1		1		1	
9 1	1		1 1		1	
10 1	1	_	1		1	
11 1	1	_	1		1	
12 1	1	_	1		1	
13 1	1	_	1		1	
14 1	1		1		1	
15 1	1		1		1	
16 1	1		1		1	
17 1	1		1		1	
18 1	1		1		1	
	1		1		1	
20 1	1		1		1	
21 1	1		1		1	
	1		1		1	
23 1	1		1		1	
24 1	1		1		1	
25 1	1		1		1	
	1		1		1	
27 1	1		1		1	
28 1	1		1		1	
29 1	1		1		1	
30	1		1		1	
31	1		1		1	
32	1		1		1	
	1		1		1	
34	1		1			
35	1		1		1	
36	1		1		1	
37	1		1		1	
38	1		1			
39	1		1			

Reach: 2					
Transect Number: 1					
Transect Number. 1		Class Cover	Ground Cox	ver Material	
		Class Cover	Ground Co	ver iviaterial	
Vegetation Arternisia californica Brasica niglia Carduns pychoccephalus nonnatiwe	Pracelia anosissina Pantago maior Toxicodentron diversilobura	Native Workstive Both Workst	Bate	ROCKICODOTE LESTIFICET COSTSE MOOTH DEDT'S NISTET	mud mater mit Lemna sp.
41	1	1		1	
42	1	1		1	
	1	1		1	
	1	1		1	
45	1	1		1	
46	1 1	1		1	
47	1 1	1		1	
48	1 1	1		1	
49	1 1	1		1	
50		1		1	
51				1	
52				1	
53				1	
54 55				1	
56		1		1	
57				1	
58				1	
59		1		1	
60		1	_	1	
61			_	1	
62		1		1	
63		1		1	
64		1		1	
65		1		1	
66		1		1	
67		1		1	
68		1		1	
69 1	1	1		1	
70 1		1		1	
71		1		1	
72		1		1	
	1	1		1	
74		1		1	
75	1	1		1	
76	1	1		1	
77	1	1		1	
78	1	1		1	

Reach: 2																		
Transect Number: 1																		
	1	II.	,	1	Ш		Class Cover				Ground Co	ver Materia	l					
Vegetation Artenisia cali	onica Brasica nigia	ycroceophalus	Phacella fath	osisima Plantago mai	or Toxicodendro	n diversilatum	Native Not	, rative &	din	Mohant	Bate	Rocklabble	_{leat litte} t	coarse moody deor	te ^t mud	nate	withlers	ing sq.
			1	=			1						1					
80		1	1					1					1					
81		1	1					1					1					
82		1	1					1					1					
83		1	1					1					1					
84		1	1					1					1					
85										1			1					
Totals 3	2	27 5	54 4	4	1		8	55	0	22	0	0	74	0	11	0	0	
							Summary			Percent:								
							Total Native Cla	ss Cover		9.411765								
							Total Non-native	e Class Co	over	64.70588								
							Total Unvegetat	ted		25.88235								

Reach: 2													
Transect Number: 2						-							
Transect Number. 2						-	Class Cover	Cround	Cover Materia				
						-	Class Cover	Ground	Cover Materia	dl			
	ø			, s									
Vegetation Ambrosia de 1	"3Chy"	den ⁵	Reternisis do	Bresica nieka Carturs ortroceoraius Nerum dearder Romaine Bress Saix asideris serdines?	sis						coarse mooth	obis	nud water with Lenne 3th.
j	11052	oler,	itor,	udassica nide a Carduns datude datudia sa. Weithu desider Workstine dises 2 2114 aside dise sedir.	ber.						24	86.	, emir
186.	3, 2/3/g	, (8)		Brazica life a Cadinz Dictory Castolia 26. Weith deside Couragine Brazz, Lacolustis Co	, 0.		Regive Architegive Both Archite		Rock/Cobble	, s	MOOL.		ith
mosi,	Ing.	ernisi	anisi	sico dunzi rona interiorati tasi uka	Nask		ive char n diant	.0.	Mcor	e litter	,se w	.et	A set of create
Vegetation Print	APIL	price	ALLE	Blas Car Clay Her, You can Lecc	Typhasp.		Rative Ronnative Both Ropant	Bare	&OC.	lest litter	Cog,	water	Rud water with contrate
1				1 1 1			1			1			
2				1 1 1		-	1			1			
3						-	1			1			
4						-	1			1			
5						-	1			1			
6						-	1			1			
7			1			-	1			1			
8			1	•		-	1			1			
9							1			1			
10		+					1			1			
11				1			1			1			
12		+					1			1			
13				1 1			1			1			
14				1			1			1			
15							1			1			
16				1		-	1			1			
17						-	1			1			
18				1		-	1			1			
19						-	1			1			
20						-	1			1			
						-		_					
21						-				1			
22 23						-	1			1			
24						-	1						
					1	-				1			
25					1	-	1			1			
26					1	-	1			1			
27					4	-		_		1			
28 29					1	-	1	_		1			
					1		1			1			
30										1			
31					1		1			1			
32					1		1			1			
33					1		1			1		4	
34 35					1		1					1	
35					1		1					1	
36 37					1		1					1	
					1		1					1	
38 39												1	
												1	
40						-						1	
41					1	-	1					1	
42					1	-	1					1	
43	•				1		1			1		1	
44 1	L			1			1			1			
45	_			1 1		-	1			1			
46 1	1			1			1			1			
47				1			1			1			
48 1	1						1			1			
49				1			1			1			
50			1				1			1			

Reach: 2																							
Transect Number: 2	2																						
												Class Cover				Ground Co	ver Materi	al					
Vegetation Profitosia	pilostatinis Adium state def	is Referrisia californ	nica Krtemisia dout	Brasica libra	dayor Clayor	ija sp.	n deander	ative grass	asidedis sadiues	a capersis	;	Kative Kr	onnative	Both	No Plant	884°	ROCKLODDIE	leaf litter	coatse mock	Hatel Water	mud	nigethi	antete contete
			1									1						1					
52			1									1						1					
53															1			1					
54											_				1			1	L				
55															1			1	L				
56											_				1			1					
57											_				1			1	L				
58											_				1			1					
59															1			1	L				
60															1			1					
61											_				1			1					
62 63															1			1	L				
64															1			1	<u> </u>				
65															1				<u>- </u>				1
	3 0	0	5	1	1	8	6	4	4	6	14	28	11	2	24	0) 55	5 0	10		0	0 1
10000			3		-			•				20		_				33		10			
																			1				
												Summary		P	Percent:								
												Total Native Cl	lass Cove		46.15385				1				
												Total Non-nati			20								
												Total Unvegeta			36.92308								

Reach: 2														
Transect Nu	umber: 3													
				Class Cov	er				Ground Co	ver Material				
Vegetation 1	nonnative gr	sairsp. Mat	Jie tiees)	Walive	aive	BOLL	No Plant				coarse moody	water water	mu ^d	water with Lemna sp.
2							1 1	-					1	
4							1						1	
5							1						1	
6							1						1	
7							1					1		
8							1					1		
9							1 1					1		
11							1					1		
12							1					1		
13							1	-				1		
14							1					1		
15							1						1	
16							1				4		1	
17 18		1		-	1		1				1			
19		1 1			1					1				
20		1			1					1				
21		1			1					1				
22		1			1					1				
23		1			1					1				
24		1			1					1	-			
25		1			1					1				
26 27		1 1			1					1				
28					1	1				1				
29						1				1				
30						1				1				
31		1			1					1				
32		1			1					1				
33		1			1					1				
34		1			1					1				
35 Totals	3	1 18			1 5 0	3	17		0	0 18		8	8	0
iotais	3	10		-	.5 0	3	1/			0 10	1	0	0	0

Reach: 2												
Transect N	umber: 3											
			Class Cover			Ground Cover Materia	al					
Vegetation	nonnative grass	ue Hees)	Native Nornative	Both Mobility		8ate Rocklicoppie	leaflittet	coatse mooth	dedis uster	mud	water with les	ing sq.
			Summary	Percent:								
			Total Native Class Cove	er 27.6923	1							
			Total Non-native Class	Cover 4.61538	5							
			Total Unvegetated	48.5714	3							

Reach: 3											
Transect Number: 1											
	Class Cove	r			Ground Co	ver Material					
								;\ \			^ζ δ.
Vegetation phaelia cicutaria non native grass 1 Ouercus	38titule						coarse mooth	gep.		nater nith Let	mna
ikutu west	agrii	Monnative				ROCHICOTORE Leaf little	Jook	\		ithle	,
celia cratic state	, ide	ornati	.x	plant	.0,	H _{COL} Elite,	, se n	*e _t	δ	*elm,	
Vegetation (National Colin	Native	401.	BOTI	No Plant	Bate	ROCHICODONE Leaf little	Cog,	wat	mud	Mar	
1				1							
2				1							
3 1		1									
4				1							
5	_			1							
6 7 1				1							
8				1							
9				1							
10				1							
11				1							
12				1							
13				1							
14				1							
15	_	4		1							
16 1 17		1		1							
18	_			1							
19	_			1							
20				1							
21				1							
22				1							
23				1							
24 1	1		1								
25 1	1 1										
26	1 1										
28	1 1 1										
29	1 1										
30	1 1										
31	1 1										
32	1										
33	1										
34	1 1										
35	1 1										
36	1 1										
37	1 1										
38	1 1										

Reach: 3									
Transect Number: 1									
	Class Cover		(Ground Co	ver Materia	I			
Vegetation Phacella cicutatia non native grass Quercus agriculta	Kative Korrative Both	Ko blant		&sie	Rocklcobole	lest litter coarse mooth	Mdebris mud	water nith	emiaso.
39 1	1								
40 1	1								
Totals 2 3 17	17 2	1 20		0	0	0 0	0	0 ()
	Summary	Percent:							
	Total Native Class Cover	45							
	Total Non-native Class Cover	7.5							
	Total Unvegetated	50							

Reach: 4							
Transect Number: 1							
		Class Cov	er	Groun	nd Cover Material		
Vegetation Ambrosia psi	Brasica nigra	ative grass	Monnative Both Monant	Bate	Rocklobble Realitter this leaf the true breen	coarse mody depris	water with Lernia sp.
2		1	1 1	_	1 1		
3			1	1	1		
4		1	1	_	1		
5		1	1		1		
6		1	1		1		
7		1	1		1		
8		1	1		1		
9		1	1	_	1		
11		1	1 1	_	1		
12			1	1	1		
13		1	1	-	1		
14				1	1		
15		1	1		1		
16		1	1		1		
17		1	1		1		
18 19		_		1	1		
20		_		1	1		
21		1	1		1		
22		1	1		1		
23	1	1	1		1		
24		1	1		1		
25		1	1	_	1		
26			1	1	1		
27 28	1	1	1 1		1		
29			1	1	1		
30	1		1	-	1		
31		1	1		1		
32		1	1		1		
33		1	1		1		
34		1	1		1		
35		1	1		1		
36 37		1	1	1	1		
38				1	1		
30				1	1		

Reach: 4											
Transect Number: 1											
				Class	Cover			Ground Cover Materi	al		
Vegetation Androsia P	Brasica niera	Medicago Dolyn	orphis			Monnative Both	No Plant		cleat tive ithout	water mud	water with Lenna SP.
39			1			1			1		
40							1			1	
41				_			1			1	
42							1			1	
43							1			1	
44							1			1	
45							1			1	
46							1			1	
47							1			1	
48							1			1	
49			1			1				1	
50			1			1				1	
51			1			1			1		
52			1			1			1		
53			1			1			1		
54			1			1			1		
55							1	1			
56				_			1	1			
57			1			1			1		
58			1			1			1		
	1		1				1		1		
60	1		1			1			1		
61			1			1			1		
62			1			1			1		
63			1			1			1		
64			1			1			1		
65 Totals	1 1	3	42		0	43	1 21	8 (1 0 46 0	0 4 7	0
IULAIS	1	3	42		U	43	1 21		40	4 /	U
				Sum	mary		Percent:				
						· Class Cover	1.538462				
						ative Class Cover	67.69231				
						etated	32.30769				
				Total	. Onveg	Ciaica	32.30703				

Reach: 4												
Transect N	umber: 2											
Transcot II				-	Class Cover		-	Ground Co	ver Materia			
				-	Cluss Cover		-	Ground co	ver iviateria		1	
Vegetation	Bacharis salicifolia Brassica niera	non native grass	zalings) Salitaevigata Salitasiolepi	s leaplings!	Native Non-rative	BOTT NO PLANT		Bate	ROCHCOODE	lea litter	coarse moody debris	mud
1		1		_	1			1				
2						1				1		
3						1						1
4						1						1
5			1		1					1		
6		1			1					1		
7						1	_	1				
8						1	_	1				
9				_		1	-			1		
10				_		1				1		
11				_		1				1		
12				_	1					1		
13			1	_	1					1		
14			1	_	1					1		
15				_		1	_			1		
16			1	-	1					1		
17		1		-	1					1		
18		1		-	1					1		
19		1	1	-		1				1		
20		1		-	1		_	1				
21		1		-	1		_			1		
22						1				1		
23		1			1					1		
24		1			1			1				
25						1					1	
26						1						1
27						1	-					1
28						1						1
29						1	-				1	
30						1	_				1	
31						1	-					1
32						1				_		1
33						1				1		
34						1	-			1		
35						1	-			1		
36						1				1		
37		1			1					1		

					Class Cover		Groun	nd Cover Mate	ial			1
					Class Cover		Groun	iu cover iviale	ıaı			
Vegetation	Bactais saltifolia Brassica nigira	non native stass	zadings) Salik aevigata Salik asidedi	s (saplings)	Mative Monnative	Both Molitarit	Bate	Rocklopi	e Leaflitter	coarse mooth debris	concrete	mud
38		1		-	1		_		1			
39				-		1	_		1			
40		1		-	1	1	_		1			
41		1		_	1	1	_		1			
42				-		1			1	+		
43				-		1			1			
44		1		-					1	+		
45		1		-					1			
46				_		1	_		1			
47				_		1	_		1			
48		1		_	1		_	1				
49				_	1		_		1			
50		1		_	1		_		1			
51		1		_	1		_		1			
52				_		1			1			
53				_		1	_		1			
54				-		1	_		1			
55			1	-	1		_		1			
56				-		1	_		1			
57		1			1				1			
58						1			1			
59				-		1			1			
60		1			1				1			
61		1			1				1			
62		1			1				1			
63		1			1				1			
64		1			1				1			
Totals	1 1	14 9	2 4		11 18	1 34		6	0 48	0	3 2	5
					-							
					Summary	Percent:						
					Total Native Class Cove	er 18.75						
					Total Non-native Class	Cover 29.6875						
					Total Unvegetated	53.125						

Dooch, F												
Reach: 5							-					
Transect Number: 1							-					
		Vegetation species		Class	Cover	T			Ground Cover Ma	iterial		
		Ostachya Sairtasiolegis ruithread mati	35									
			ree									
		×\	ne									
		14/32										
		, s							_			
		achy with	.5						abits			, sQ.
	:5'	oste o. is the	ile.						m ge		Ö	mir ap
	:365	usst deb. der		.je		,		while ex	100G.		$J_{T_{E}}$, iipro
	Ambrosia psil	cucamptus so. sairtasiolepis turi sonchus olera		Mative Monnative	S	No Plant		Rate Rock/Copple Leaf-litter	garse mody debris	λ	waterwithle	grouted riprap
Reading per foot:	AMIL	Euco Salit Sono		Mative Monnati	BOLL	40,		Bare Rocky Feature	og, nate	mud	Mate	arou
1	,	1 1			1	•	-	1				
2		1 1			1		-	1				
		1 1					-	-				
3		1 1			1		-	1				
4		1 1			1			1				
5		1 1			1		-		1			
6		1 1			1				1			
7		1		1					1			
8		1		1			_		1			
9		1		1					1			
10		1		1					1			
11		1		1					1			
12		1		1					1			
13		1		1			-		1			
14		1		1			-		1			
15		1		1			-		1			
16		1		1			-		1			
17		1		1			-	1				
18		1		1			-					
19		1		1			-	1				
20		1 1			1			1				
21				1				1				
22		1		1				1				
23		1		1				1				
24		1		1				1				
25		1		1				1				
26		1		1				1			-	
27		1		1				1				
28		1		1				1				
29		1		1				1				
30		1		1				1				
31		1		1				1				
32		1		1				1				
		1		1			-					
33		1		1				1				
34		1		1				1				

Reach: 5													
Transect Number: 1													
	,	Vegetation species		Class	Cover					Ground Cover M	laterial		
Reading per foot:	Ambrosia psilosia	chya Sair asiolegis raith red mati	he trees	Wative Worknative	Both	No Plant		Bate	RocklCobble Leaf.Litter	Coarse mooth debris	mud	waterwithle	grouted ripts o
35		1		1					1				
36		1		1					1				
37		1		1					1				
38		1		1					1				
39		1		1									1
40		1		1					1				
41		1		1					1				
42		1		1					1				
43		1		1									1
44		1		1			-		1				
45		1		1					1				
46		1		1									1
47		1		1					1				
48		1		1					1				
49		1		1									1
50		1		1									1
Totals	1	6 50 1		43 0	7	0	_		2 2 29	0 12	2 0	0	
				Total Class Cover:									
				Native	100								
				non-native	14								
				no vegetation	0								

Reach: 5								
Transect Number: 2								
		Class Cover				Ground Cover Ma	aterial	
Reading per foot: Ronnative as	Roipha hasturium aduaticum		Worlant	Bare Rock/Cobble	Lea Litter	Wdebiis		atotted rioran
Reading per foot: 1	4 1,	6 6 8	1	1	V	0 4	1, 2,	8
2			1	1				
3 1		1			1			
4			1	1				
5			1			1		
6			1			1		
7			1			1		
8	1	1			-	1		
9	1	1			1			
10	1	1			1		1	
11 12	1	1					1	
13	1	1			1		1	
14	1	1			1			
15	1	1			1			
16	1	1			1			
17	1	1			1			
18	1	1				1		
19	1	1				1		
20	1	1				1		
21			1			1		
22			1			1		
23			1					1
25			1					1
26			1					1
27			1					1
28			1					1
29			1					1
30			1					1
31			1					1
32			1					1
33			1					1
34			1					1
35			1					1
36			1					1

Reach: 5															
Transect Number: 2															
Transect Number. 2						Class	Cover					Ground Cover M	aterial		
Reading per foot:	non native of	asses aorippa na	Typhasp.	in.	Wajive	Nornative	BOLL	Modalar	Bate	Rock(Calable	Leaf Litter	Coarse moody debris	mud	uder with lennass.	of a ^Q
37			`			`	•	1	<u> </u>		<u> </u>			· •	1
38								1							1
39				_				1							1
40								1							1
41				_				1							1
42				_				1							1
43								1							1
44								1							1
45								1							1
46								1							1
47								1							1
48				_				1							1
49				_				1							1
50								1							1
Totals	1		2 11	<u> </u> - -	11	3	0	36		1 2	8	0 9	2	0	28
					Total Class C	Cover:									
					Native		22								
					non-native		6								
					no vegetation	n	72								
				-											
l	1	1	1				1	1			1		1		1

Reach: 6														
Transect Nu	mber: 1						-							
			~	Class C	over				Ţ.			nd Cover M		
Reading pe	non-native at a see s	Julium adul sure salik basure	Wative	Non native	BOLI	Motions		Bate	Rock/Cobble	less litter	Coarse mood	uažer unažer	mud water with	emaso.
1						1				1				
2						1				1				
3						1	-			1				
4	1			1									1	
5	1			1			_						1	
7	1			1				-					1	
8	1			1									1	
9	1			1									1	
10	1			1									1	
11						1						1		
12						1	-					1		
13						1						1		
14 15						1						1		
16	1	1			1		_					1	1	
17		1	1										1	
18	1	1			1								1	
19	1	1			1								1	
20	1	1			1								1	
21		1	1				-						1	
22		1	1							1				
23		1	1							1				
25		1	1					-		1				
26		1	1							1				
27		1	1							1				
28		1	1							1				
29		1	1							1				
30		1	1	_						1				
Totals	9 2	15	11	7	4	8			0 0	12	0	5	13	0 0
			Total Class C Native		50									
			non-native		36.66667									
			no vegetatio	on	26.66667									

Reach: 6										
Transect Number: 1										
	Class Cover			_	Grou	nd Cover M	aterial			
Reading pe non-native at asset Rocippa nasturium aguit Rasiolegis Mature L	Mative Morrative Both	WO Plant	Bate	Rock Cobble Leaf Little T	Coarse mood	uster uster	mud	nater with le	metaldebis	

Reach: 7 Transect Number: 1 - not sample	ad during no	est clearance	curvove bo	sauca tha ar	oa had not l	aon cloared						
Vegetation species	eu uuring po		Cover	Lause the ar	ea nau not i	Jeen cleared.		Grou	l nd Cover Ma	l aterial		
30 3 3 4 4					-			Coarse mood	:6		ungouted in	
									, debt.		Mas.	,aQ
		.,e					je Leaflitter	600,	.4	2/1/2.	er.	8
	s _{vi} .	anatile	.xx	plant		e 34/00 ⁰	, little	ise n	~e ^t	" or will	courte	
Reading per foot:	Mative	Monnative	BOTIL	Mo blant		sare Rockill	reg,	Cogr	water	Mars	Mg.	
1												
2					-							
3 4	_				_							
5	_				_							
6					_							
7												
8												
9												
10	-				_							
11 12	-				_							
13					_							
14					_							
15					_							
16					_							
17	_				_							
18	-				_							
20					_							
21					-							
22												
23					_							
24					-							
25	-				_							
27					_							
28					-							
29												
30												
31												
32	-											
33	-											
35												
36												
37												
38												

Reach: 7										
Transect Number: 1 - not sampl	ed during post c	learance surveys b	ecause the a	rea had not	peen cleared.					
Vegetation species		Class Cover		_		G	iround Cover N	aterial		
	Malive F	Monnative Both	No start		e WCoor	e Leatlitter Coarse	noody debris	nder nitr le	grouted rif	Nago.
Reading per foot:	430 6	Non-no Both	40		Bare ROCKIL	res. Cos	Mgc	Mac	Me	
39										
40										
41				_						
42				_						
43				_						
44				_						
45				_						
47	_			-						
48				_						
49				_						
50										
51										
52										
53										
54				_						
55				_						
56				_						
57	_			_						
58 59	_			_						
60				-						
61				_						
62				_						
63										
64										
65										
66										
67				_						
68										
69										
70										
71 72				_	-					
73										
74										
75										
76										

Reach: 7											
Transect Number: 1 -	 not sampled during r	oost clearance su	ırvevs becau	use the are	ea had not b	een cleared	d.				
Vegetation spe		Class C						Ground Cover Ma	nterial		
								:6		.0.	
	Wative	Wonnative	\$otin 4	NO Plant		&ate	ROCHICOODIE LESTLIKES	coaise mooth debris	ister with le	ungouted ripras	
Reading per foot:	42	42	δ _c	42		Ø.	<i>⟨v v v v v v v v v v</i>	C n	11.	7,	
77 78	-										
79	-										
80											
81											
82											
83											
84						_					
85											
86											
87											
88	-										
90	-										
91											
92											
93											
94											
95											
96											
97											
98											
99 100											
100											
102											
103											
104											
105											
106											
107											
108											
109											
110 111	-										
112											
113											
114											
								l l			

Reach: 7																
Transect Nu	umber: 1 - n	ot sample	d during po	st clearance surve	eys beca	use the ar	ea had not k	een clea	red.							
Veg	etation spe	cies		Class Cove	er						Grour	nd Cover Ma	aterial			
	ng per foot: 115 Rative Northalive Roth				`	MO Start		Bate	RocklCobble	e Leaf Litted	Coarse moody	dedits nated	water with Lennas C	outed riptap		
Totals	0	C) (0	0	0	0		0 (0 0	0	0	0	0	0	
			Total Class Native non-native no vegeta	e	0 0											

Reach: 8				
Transect Number: 1				
	Class Cover		Ground Cover Materia	
			Leaflitter Claree moody debris	
			"79ED	.0
3500	e	ble	3, 1000,	ildiga
chus	ive chatt is plant	e WCot	elitte seem sei	y "keg," y
Reading pe Sonchus asper	Matine Mouriatine Both Mobient	Bare Rock/Copple	leglitti College, mater	mud grouted riprad sand
1	1			1
2	1			1
3	1			1
4	1			1
5	1			1
6	1			1
7	1			1
8	1			1
9	1			1
10	1 1			1 1
12	1			1
13	1			1
14	1		1	_
15	1		1	
16	1		1	
17	1		1	
18	1		1	
19	1 1		1	
20				1
21	1			1
22	1		1	
23	1		1	
24 25	1 1		1 1	+ + + + + + + + + + + + + + + + + + + +
26	1		1	
27	1		1	
28	1		1	
29	1		1	
30 1	1			1
31	1			1
32	1			1
33	1			1
34	1			1
35	1			1
36	1			1
37	1			

Reach: 8				
Transect Number: 1				
	Class Cover		Ground Cover Material	
Reading pe Sonthus asper	Native Norvative Both Norvant	Rate Rock/Cobble	Leaf Litter Coarse moody debris	roud grouted in sand
38	1			1
39	1			1
40	1			1
Totals 1	0 1 0 39	0 0	0 0 14	3 21 2
	Total Class Cover:			
	Native 0			
	non-native 2.5			
	no vegetation 97.5			

Reach: 8				
Transect Number: 2				
	Class Cover		Ground Cover Ma	nterial
Reading pe trodium cicutatium pongative grass ponganum are mastrum sasper	Native Non-Pative Both	Mo Plant Bare	Rock/Copole Leaflittet Coarse mooth	debris riud roots
		1 1		
2		1 1		
3		1 1		
4		1 1		
5 6		1 1		
7		1 1 1		
8		1		1
9		1 1		
10		1 1		
11		1		
12		1		
13		1 1		
14		1 1		
15		1 1		
16		1 1		
17		1		1
18 19		1		1 1
20		1		1
21		1		1
22		1		1
23		1		1
24		1		1
25 1 1	1			1
26		1		1
27		1		1
28 1 1	1			1
29		1		1
30	4	1		1
31 1 32 1	1			1
32 1 33	1	1		1 1
34 1	1	1		1
35 1	1			1
36	-	1	1	
37		1		1
38		1		1

Reach: 8															
Transect Numb	ner: 2														
Transcet Ivania	,C1. Z					Class	Cover				Grou	nd Cover Ma	aterial		
				•		Ciuss	COVCI								
Reading pe &	dium cicutatium non-nativ	ediass	tonum ar	Sonchus aspet	,e	Wornative		, shit		ROCHICOBBLE	litter	Coarse mood	debris (
Reading pe	die hourt.	80	148	Sona	Mative	Mouri	BOTT	No Plant	Bare	Bock	Leaf	Coars	nate.	mud	roots
39	1					1								1	
40	1					1								1	
41								1		1					
42								1		1					
43								1		1					
44								1		1					
45								1		1					
46								1		1					
47								1		1					
48								1		1					
49								1		1					
50								1		1					
Totals	4	4	1	1	0	8	0	42	2	.5 0	1	0	7	16	
					Total Class	Cover:									
					Native		0								
					non-native		16								
					no vegetat	ion	84								

Reach: 9														
Transect N	ımbar: 1													
			Class	Cover					Crour	d Cover M	atorial			
Vec	etation species Frakinus lipetala, matus 1 1 1 1	Native 1 1 1 1			NoPlant 1 1 1 1 1 1	&ase	ROCKICODOTE 1 1 1	leaf litter	24	debris nate 1 1 1 1 1		Jag Debrits Con	nud 1	L L
10					1					1				
11					1					1				
12					1					1				
13					1					1				
14		_			1					1				
15 16					1					1				
17		_			1					1				
18					1					1				
19					1 1					1				
20					1					1				
21					1					1				
22					1	1								
23					1	1								
24 25		_			1 1	-	1							
Totals	4	4	0	0		2		0	0	17	0		0 2	2
					_ _	_								
		Total Class	Cover:											
		Native		16										
		non-native		0										
		no vegetat	ion	84										
		<u> </u>												
												<u> </u>		

Reach: 10								
Transect Number: 1				_				
Transcer transcer 1			Class Cover	_		Grou	nd Cover Material	
				_		0.00	:6	
Reading pe & assica negri	Cheurza. biaurago wajot	Matine	Mornative Both Moplant		Bare ROCH CODDIE	Leafitter Coase moot	noter mid noter with a	gedech mat
2		-	1 1	_				1
3			1	_				1
4			1	_				1
5			1	_				1
6			1	_				1
7			1	_				1
8			1					1
9			1	_				1
10			1					1
11			1	_				1
12			1	_				1
13			1	_				1
14 1			1	_				1
15			1	_				1
16		_	1	_				1
17 18	1		1	_			1	1
19		_	1 1	_			1	
20		-	1	_			1	
21			1	_			1	
22			1	_			1	
23			1	_			1	
24			1	_			1	
25			1				1	
26			1	-			1	
27			1				1	
28			1				1	
29			1				1	
30			1				1	
31			1				1	
32			1	-			1	
33			1	_			1	
34			1	-			1	
35	1		1				1	
36	1		1				1	
37	1	<u> </u>	1				1	
38	1		1				1	

Reach: 10								
Transect Number: 1								
			Class Cover	-		Grou	nd Cover Material	
				-			; 6	
	•						dedi	æ
ige	o. najo		,e		ne ne	, , , , , , , ,	7	ngt nat
icanii	'neg' 360', 326.	,e	native		1CODE	litter cemu	, with	och n.
Reading pe & rasica ring?	Cheuseb. brangsougiet.	Native	Nonnative Both Noplant		Base Rock/Comple	Leaf Litter Coarse mooth	Malebri Rud matermith?	geotech nat wash
39				-	· ·			
40				-			1	
41		L 1	l l	-			1	
42		l 1	1	_			1	
43		1	l l	_			1	
44		1	1				1	
45	:	<u> </u>	1	_			1	
46			1	_			1	
47			1	_			1	
48			1	_			1	
49			1	_			1	
50			1	_			1	
51		_		_			1	
52		-		_			1	
53 54				_			1	
55		_		_		1	1	
56	1		1	· -		1		
57				-				1
58			1	_				1
59			1	_		1		
60			1	_				1
61			1					1
62			1					1
63			1					1
64	1		1	_				1
65			1	_				1
Totals 1	1 2 1	L 11	1 4 0 50	0	0 0	3 0	37 0 (24 1
		Total Class	Cover					
		Total Class	16.92308	-	<u> </u>			
		Native non-native		-				
		no vegetat		-				
		no vegetal	70.32300					

Reach: 10													
Transect N	umher: 2												
Transect iv	uniber. 2					Class	Cover				Cround Co	ver Material	
				-		Class	Cover		-		Ground Co	ver iviateriai	
		٠,6	sie										
		ANIE	0										
		esb.		um								. (-	
		MILL	•	viaces.								lepris	
	, o	Xa.	رمي ر	VIII.						.0.		8400	
	arilli un te	xive b	, cruit			xive		×		obble	xe ^c	MOO	
	asilo asilo	2.Nat	xathe		*ive	2-Nat	*/	Slall		le HC	alite	ase xet	6.
Reading pe	Brasica niera cerasium tor	UOI.	ass Piptatherum		Wative	Monnative	BOTI	Mo Plant		Base Bock/Copple	Leaf Litter	Coarse mooth debrits	mud
1	Brasica nigra Cerasium tor							1		1			
2								1		1			
3								1		1			
4								1	-	1			
5								1	-	1			
6								1	-	1			
7								1	-	1			
8								1	-	1			
9								1	-	1			
10								1	-	1			
11								1		1			
12								1		1			
13								1	-	1			
14								1	-	1			
15								1	-	1			
16								1	-	1			
17								1	-	1			
18						1				1			
19								1		1			
20						1				1			
21				•				1	•	1			
22						1		_		1			
23						_		1		1			
24						1		_		1			
25								1		1			
26								1	-	1			
27								1		1			
28						1				1			
29						1				1			
30						_		1		1			
31								1	-	_	1		
32								1	-		1		
33								1			1		
34								1			_		1
35								1	-				1

Reach: 10													
Transect N	umher: 2												
Transect IV	umber. z					Class	Cover				Ground Cov	vor Matoria	
						Class	Cover				Ground Co	ver iviateria	
			tanun ssp. vulgate non native grass										
			O. Anye										
			N SSX	enu									is
		,	xanui ss	iliace									debi
	1910	, to	e gras	,		.0,				We.		308	A -
	.(3)	HUM	ative there		.0.	ative		ant		10000	, it ^{tel}	ewo	4
Reading pe	Mass.	cetas	taturn sp. Ne grass		Mative	Monnative	BOTH	NO Plant	Baie	COCK1	leaf litter	Coarse mooth	water mud
Reading pe	V		<u> </u>		-	7	V		V	4	<u> </u>	0	7, (,
37								1 1					
38								1					
39								1					
40								1					
41								1					1
42								1					1
43								1					1
44								1					1
45			1			1							
46			_			_		1					
47								1					
48								1					
49								1					
50								1					
51								1					
52								1	1				
53								1	1				
54								1	1				
55								1	1				
56			1			1			1				
57								1			1		
58								1			1		
59								1			1		
60								1			1		
61								1			1		
62								1			1		
63								1			1		
64								1			1		
65								1			1		
66			1			1					1		
67			1			1					1		
68								1			1		
69			1			1					1		
70								1			1		

Reach: 10															
Transect Nu	umber: 2														
			<u> </u>				Class	Cover				Ground Cov	er Material		
Reading pe 71	Brasica nigra	Ceratium for	hanun ssp. vulga	je ss pidanerun i	rillia Euro	Mative	Morrative	BO ILL	No part	ba ^{te}	_{ROCK} ICOONE	Leaf Littled	Coarse moody	debris water	mud
71									1			1			
72									1			1			
73									1			1			
74									1	1					
Totals	5	1	4	1		0	11	0	63	36	0	20	0	4	14
						Total Class	Cover:								
						Native		0							
						non-native		14.86486							
						no vegetat	ion	85.13514							

Transect Number: 3 Class Cover Ground Cover Material	Reach: 10													
Reading pe Captures Reading pe Captures Reading pe Captures Reading pe Captures Reading pe Captures Reading pe Captures Reading pe Captures Reading pe Captures Reading per Captures Readin														
1			Class Cover						Grour	nd Cover Ma	aterial			
2	Reading pe Cyperus sq.	Wative	Mon. native Both		φ _α	sie <	act ⁴ Cobble	leaf litter	Coarse moods	water .	mud	ndernither	geotechnat	
3	2				_									
4 1					_									
Color					_									
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1													1	
S														
9														
10				1	_									
11					_									
13 14 15 16 17 18 19 20 21 22 23 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37														
14 15 16 17 18 19 20 21 22 1 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37					_									
15														
16 17 18 19 20 21 21 22 1 24 25 26 1 27 28 29 30 31 32 33 31 32 33 34 35 36 37					_									
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37					_									
18 19 20 21 22 23 24 25 1 26 27 28 29 30 31 32 33 34 35 36 37					_					1				
1														
1														
22 23 24 25 1 26 27 1 28 1 29 30 31 32 33 34 35 36 37					_									
23 24 25 1 26 1 27 28 1 29 1 30 1 31 32 33 34 35 36 1 37					_									
24 25 26 27 28 29 30 31 32 33 33 34 35 36 37					_									
25 1					_									
27 1 28 1 29 1 30 1 31 1 32 1 33 1 34 1 35 1 36 1 37 1														
28 29 30 31 32 33 34 35 36 37														
29 30 31 32 33 34 35 36 37														
30 31 32 33 34 35 36 37														
31 32 33 34 35 36 37														
32 33 34 35 36 37														
34 35 36 37	32													
35 1 36 1 37 1														
36 37														
37 1														
38 1 1 1 1 1 1 1	38													

Reach: 10														
Transect N	umber: 3													
		_		Class	Cover					Ground Cover	Material			
Reading pe	Cherneso.	4	Native .	Worndive	Both	40 Plant	Bare	ROCH/COODIE	Leaf Littlet	coarse moody deprits	mud	water with lerns	beofectinat	
39		_				1					1			
40		_				1					1			
41		_				1 1					1			
43						1					1			
44						1					1			
45						1					1			
46						1					1			
47						1					1			
48						1					1			
49						1					1			
50		_				1					1			
51						1					1			
52		_				1					1			
53 54		_				1 1					1			
55	-					1					1			
56						1					1			
57	1			1		_			1		_			
58						1			1					
59						1			1					
60						1			1					
61						1			1					
62						1			1					
63		_				1			1					
64 65		_				1			1					
66						1 1			1				1	
67						1							1	
68						1							1	
69						1							1	
70						1							1	
71						1							1	
72						1							1	
73						1							1	
74						1							1	
75 Tatala			-			1		^			40		1	
Totals	1		0	1	0	74	0	0	9	0	40 (0	26	

Reach: 10													
Transect N	umber: 3												
			Class Cover					Grou	nd Cover Ma	aterial			
Reading pe	Chernesh.	Mative	Notinative Both	MoPlant	&ate	ROCH/Cobble	ealittei	Coatse moot	unater .	mud	nder nith let	geotech nat	
		Total Class	Cover:										
		Native	0										
		non-native	1.333333										
		no vegetati	ion 98.66667										

Reach: 10											
Transect Nu	ımber: 4										
1 2113 2 2 1 1 1			Class Cover				Ground Cover M	aterial			
Reading pe	nan-native et ass	Mative		NO Plant	Bate	ROLH COODIE LESS LISTES	Coarse moody debris	water with le	mud	ung outed rips	%
1				1						1	
2				1						1	
3				1						1	
4				1						1	
5				1						1	
6				1						1	
7				1						1	
8		_		1	_					1	
9				1 1						1	
11		_		1						1	
12				1						1	
13				1						1	
14				1						1	
15				1						1	
16				1						1	
17				1						1	
18				1						1	
19				1						1	
20		_		1	_					1	
21				1 1						1	
23		_		1						1	
24	1		1							1	
25	1		1							1	
26	1		1							1	
27	1		1							1	
28	1		1							1	
29	1		1							1	
30	1		1							1	
31				1			1				
32				1			1				
33				1			1				
34				1	-		1				
35 36				1 1			1 1	-			
37				1			1	-			
38				1			1				
38				1			1 1				

Reach: 10										
Transect Nu	ımher: 4									
T. GIISCOLING			Class Cover				Ground Cover Ma	aterial		
	non-native grass			nant		ROCH CODDIE LESS LITTES	Coarse mooth debris	waterwith	rnid Ingrotted rif	¹ tag
Reading pe	ROTE	Wative	Mounts Both	No blant	Bare	Bock, feat,	Coarse water	wate.	mud ingre	
39				1			1			
40				1			1			
41				1			1			
42				1			1			
43				1			1			
44 45				1			1 1			
45				1			1			
47				1			1			
48				1			1			
49				1			1			
50				1			1			
51				1			1			
52				1			1			
53			1						1	
54				1					1	
55 56				1					1	
57			1	1		1			1	
58		_	1	+		1				
59			1			1				
60			1			1				
61			1			1				
62			1			1				
63				1					1	
64				1					1	
65				1					1	
66				1					1	
67 68				1					1	
69				1					1 1	
70				1					1	
71				1					1	
72				1					1	
73				1					1	
74				1					1	
75				1					1	
76				1					1	

Reach: 10														
Transect No	umber: 4													
				Class Cover						nd Cover Ma	aterial			
Reading pe	nonnative glass	2	Mative	Monnative Both	Wo stark	Bate	Rocklox	Johe Leaflitter	Coarsemooti	Adebris Nater	water with Lennas Q.		ungouted info	%
77					1								1	
78					1								1	
79					1								1	
80					1								1	
81					1								1	
82					1								1	
83					1								1	
84					1								1	
85				10	1								1	
Totals	7		1	13	0 71	-	0	0	6 0	22	0	4	53	
			Total Class	Cover:										
			Native	1.1764	171									
			non-native	15.294	112									
			no vegetati	ion 83.529	941									

Reach: 12													
Transect Number: 1													
Transcer Humber, 1				Clace	Cover				Group	d Cover Materia	1		
				Ciass	Cover				Ground	a cover iviateria			
Reading pe winning guitatus non native?	POWEDIUM	P. Salix Booddingii Lagadiing)	Native			No plant		Rock/Cobble	Leaf Litter Coarse mooth	polis nud		waterwithle	Blotted librar
	L			1			1						
2						1							1
3						1							1
4						1							1
5						1							1
7						1							1
8						1							1
9						1							1
10						1							1
11						1							1
12						1							1
13 1	1				1						1		-
14	_	1	1							1			
15		1	1							1			
16						1				1			
17						1				1			
18						1				1			
19						1			1				
20		1	1								1		
21		1	1								1		
22						1					1		
23						1					1		
24						1					1		
25						1					1		
26						1					1		
27						1			1				
28						1			1				
29		4	4			1			1	4			
30 31		1	1			1				1			
32	1					1				1			
33						1				1			
34						1				1			
35						1				1			
36						1				1			
37						1				1			
<u> </u>	1			l .	1	-				-			

Reach: 12									
Transect Number: 1									
				Class	Cover			Ground Cover Material	
		2							
		P. Salix & Condine il seedling 1						.6	0.
Reading pe within non-n	ative grasses	. Lee'						Leaf Litter Coarse mooth debris mud	water with Lenna sp.
, italie	gras, s	P. Aingil					\e	294 g.	Lerin 1280
l user	ative grasss Polygonum s	odu sp.		Nonnative	n ^X		ROCHICODDIE	Leaf Litter Coasse mood, mater mind	water with Lemm growted riprap
i significant	MEO	alix es upha	Wative	'on-ne	BOTT NO POTONE	Bale	CKIC	Leaf It Coarse mater mud	axer ouxe
Reading pe 4' 6	₹	50 4	420	40		80	€.	ie Co in K	n, 6)
38					1			1	
39					1			1	
40					1			1	
41 42					1			1	
43					1			1	
44					1			1	
45					1			1	
46					1			1	
47					1			1	
48					1			1	
49					1			1	
50					1			1	
51					1			1	
52					1			1	
53					1			1	
54					1			1	
55					1			1	
56					1			1	
57					1			1	
58					1			1	
59					1			1	
60					1			1	1
61		1 1	1						1
62		1 1 1	1						1
64		1 1	1						1
65		1 1							<u>-</u> 1
66		1 1							1
67		1 1	1						1
68		1 1							1
69		1 1							1
70		1							1
71		1	1						1
72		1	1						1
73		1	1						1
74		1	1						1

Reach: 12													
Transect Number: 1													
			Class Cover	'	-				Groui	nd Cover M	aterial		,
Reading pe Minutus guttatus non-native grasses Polygonum sp. Salix goodding 1	Typhasp.	iju ^e Not	ornative Both	Mobilant		8ste	ROCHICODOR	Leaf Litteet	Coarse mood	debris water	mud 1	water with Let	Blotted intap
Totals 1 1 1 16	13	20	1	1 53	_	1	0	4	0	36	23	0	11
	Nati non	al Class Coverive n-native vegetation	2.666		- - - -								

Reach: 12												
Transect N	umber: 2											
				Class	Cover			Grou	nd Cover Ma	aterial		
Reading pe	nonnative stass	Polygoling 26.	hative Adive	ative		8 ³ de	ROCH CODDIE Leaf Littlet				water with Lenna so.	, Kash
1					1		1					
2				1			1					
3					1						1	
5					1 1 1						1 1 1	
7		1		1							1	
8		1		1							1	
9		1		1							1	
10		1 1		1							1	
12		1		1							1	+
13		1		1							1	
14		1		1							1	
15		1		1							1	
16		1		1							1	
17		1		1							1	
18 19		1 1		1							1	
20		1		1	1					1		•
21		1			1					1		
22		1			1					1		
23		1		1					1			
24		1		1					1			
25		1		1					1			
26		1		1					1			
28		1		1					1	1		
29		1		1						1		
30		1		1						1		
31		1		1						1		
32		1		1						1		
33		1		1						1		
34		1		1						1		
35		1		1						1		
36		1		1						1		
38		1		1						1		
38		1		1						1		

Reach: 12											
Transect N	umber: 2										
Transcott				Class	Cover			Groui	nd Cover Ma	i eterial	
Reading pe	nonnative grass	Polygoring 26.	si Wative	ative		Bate	ROCH Cololle Leaf Littlet			mud water with Lemma so.	rash reash
39						<u> </u>		-		1	
40		1								1	
41		1								1	
42		1	<u>-</u>							1	
43		1		<u> </u>						1	
44		1						1			
45		1	-					1			
46		1						1			
47		1						1			
48		1						1			
49		1						1			
50		1						1			
51		1		-					1		
52		1		-				1	1		
53 54		1 1		•			1	1			
55		1	-	<u> </u>			1				
56		1	-	<u>- </u>			1				
57		1	-	-			1				
58		1		·			1				
59		1					1				
60		1		<u> </u>			1				
61		1	í				1				
62		1					1				
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67		1		<u> </u>			1				
68		1		-			1				
69		1		-			1				
70 71		1		-			1		1		
71		1 1	-	•					1		
73		1	-	<u>- </u>					1		
73		1		-					1		
75		1							1		
76		1		-					1		
			_	- 1							

Reach: 12									_						
Transect N	umber: 2			_				_	_						
TT at 13 ECL IV	umber. Z			_		Class	Cover				Grou	l nd Cover Ma	aterial		
Reading pe	non-native grass	zaprae PolyBoturo	sair gooding	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	Mative	ative		,X	Bate	ROCH Cobble Leaf. Little 1				water with Lernia sp.	riosh rosh
77 78			1 1	_	1							1 1			
79			1	_	1			_	_			1			
80			1	_	1							1			
81			1	_	1							1			
82			1		1							1			
83			1		1							1			
84			1		1							1			
85			1	_	1							1			
86			1		1							1			
87			1		1							1			
88			1		1							1			
89 90			1		1				-			1	1		
91			1	_	1				-	1			1		
92			1		1					-			1		
93			1		1								_		
94			1		1										
95			1		1					1					
96			1 1				1			1					
97			1 1				1			1					
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99			1			1				1					
100			1	_		1 1			-	1 1					
101			1			1			l	1					
103			1			1				1					
104			1			1				1					
105			1			1				1					
106			1			1				1					
107			1			1				1					
108			1			1				1					
109			1			1			<u> </u>	1					
110		1 1	1 02		0.0	1 12				1 25		30	24	0	17
Totals	1	1 1	15 92	_	86	13	6	5	0	1 35	8	26	21	0	17
				_	Total Class	Cover:	83.63636								

Reach: 12														
Transect Number: 2														
				Class	Cover					Groui	nd Cover M	aterial		
Reading pe Non-native stass	Pohlounu za	s.	Wative	Mornative	Both	Modalit	Bate	ROCHCOODE	Leaf Littlet	Coarse Mood	debis water	mud	water with Let	grouted liptop
			non-native		17.27273									
			no vegetatio	n	4.545455									
				·										

Reach: 13										
Transect Nu	umber: 1									
		-	Class Cover			I	Ground Cover Ma	aterial		
Reading pe	nonnative glass	Wative	Non-rative Both	No Plant	834e	ROCH Leaf Litter	Coarse mooth debris	mud	water with Lennas P.	\$
1 2	1		1	1		1				
3				1	1					
4	1		1			1				
5	1		1			1				
6	1		1			1				
7	1		1			1				
8	1	_	1			1				
9	1	_	1			1				
10 11	1 1	-	1 1			1 1				
12	1		1			1				
13	1		1			1				
14	1		1			1				
15	1		1			1				
16	1		1			1				
17	1		1			1				
18	1	_	1			1				
19	1		1			1				
20 21	1		1			1				
21	1	_	1	1		1 1				
23				1		1				
24				1		1				
25	1		1			1				
26				1	1					
27	1		1			1				
28	1		1			1				
29	1		1		1					
30			1			1				
31 32	1	-	1 1			1 1				
33	<u> </u>		1	1	1					
34	1		1			1				
35	1		1			1				
36			1			1				
37	1		1			1				
38	1		1			1				

Reach: 13																			
Transect Nu	ımber: 1																		
					Class Cov	er								Grou	nd Cover M	laterial			
Reading pe	nonnative grae	Ş	Majive	WOL.	ga ^{tive} Bo ^r	ŝ	MO Plant		Bare		ROCHCODDI	& & &	Litter .	Coarse mood	water water	mud	nater i	ith let	Brouted riprap
39								1		1									
40								1				1							
Totals	31			0	31	0		9		5		1	34	0	()	0	0	0
			Total Class Native non-nativ	ve	:	0 77.5 22.5													
	_																		

Reach: 13													
Transect N	umber: 2												
	Vogotati	on species			Class	Cover			Grou	nd Cover M	aterial		
Reading pe	3		jus mexicana	Mative	ative		Bate	ROCH Leaf Littlet				water with Lenna sp.	%
1		1			1			1					
2		1			1			1					
3		1			1			1					
4	1			1				1					
5	1			1				1					
6	1			1				1					
7	1			1				1					
8		1		1	1			1					
10		1		1	1			1					
11		•		1				1					
12				1				1					
13		1			1			1					
14		1			1			1					
15						1		1					
16						1		1					
17		1			1			1					
18						1						1	
19		1			1							1	
20		1				1		1					
21		1	1	1		1		1 1					
23		1	1			1		1					
24			1	1		-		1					
25		1	1			1		1					
26		1			1			1					
27						1	1						
28		1			1			1					
29		1				1		1					
30				1				1					
31				1				1					
32				1				1					
33				1				1 1					
35		 		1				1					
36						1		1					
37		+		1		-		1					
38				1				1					
38	1			1									

Reach: 13														
Transect Number: 2							_							
	Vegetation specie	es es			Class Cover					Grou	ınd Cover	^r Material		
Reading pe Arternisia ca	Hornica Sturn squamativ	e grass	^K o _{lo}	give	Non-rative Both	No blant		83te	Rock(Cobble	leaf litter coarse mod	water water	mud	waterwith	grouted riprat
39 1	L			1			_			1				
40 1	L			1			_			1				
Totals 11	13	16 6		20	10	6 4		1	0	37)	0	2 0	0
			Tot	tal Class (Cover:		_							
			Nat	tive		65	_							
			nor	n-native		40								
			no	vegetati	on	10	_							

Reach: 13									
Transect Number: 3	_								
Transect Namber: 5		Class Cover		Grou	nd Cover Ma	ı aterial			
					.6			٥.	
Reading pe non native at 1 wanting to nio sq.				Bare Rock/Copple restricted Coasse moon	debili		waterwithles	Mask	
Reading pe non native grass Wahingtonia sp.		0		Bare Rock/Copple restricted Coasse moon	40		"Jes	grouted riprac	?
agine agon	.0.	aative	, ant	Copy "The " " " " " " " " " " " " " " " " " " "			with	"ed riv	
Pooding no continuation	Mative A	gornative Both	Mohant	Bare Rock/Copple restricted Coarse moon	water	mud	"agie"	groute	
1			1		7-	ζ.	7.	%	
2			1	1					
3 1	_	1	1	1					
4 1		1		1					
5 1		1		1					
6 1		1		1					
7 1		1		1					
8			1	1					
9 1		1		1					
10 1		1		1					
11			1	1					
12 1		1		1					
13 1		1		1					
14			1			1			
15			1			1			
16	_		1	1					
17 18			1	1					
19			1	1 1					
20	_		1	1		1			
21			1	1					
22	_		1			1			
23 1		1	_	1		_			
24			1	1					
25			1			1			
26			1	1					
27			1	1					
28			1	1					
29			1	1					
30			1	1					
31			1	1					
32			1	1					
33			1	1					
34		4	1	1					
35 1		1		1					
36 1 37		1	1	1					
38			1	1					
36			1	1					

Reach: 13								
Transect Number: 3								
	Class Cover					Ground Cover M	aterial	
Reading pe nonnative stass Natingtonia sp.	Wative Wonnative Both Wo Plant		Bate	ROCHLCOODIE	lea litted	Coarse mooth debris	mud water with Lemna sp.	Ş
39 1	1				1			
40 1	1				1			
Totals 13 1	0 14 0 26	-	3	3	29	0 0	5 0 0	
	Total Class Cover:	_						
	Native 0							
	non-native 35							
	no vegetation 65							

Reach: 14											
Transect Number: 1											
				Class	Cover			Grou	und Cover Material	I	
Reading pe Stassica nif	gra non native grasses	s salik laev	ę ^ż	ajive		40 plant	æ	ROCKICODDIE LESS LISTES	Wdebris	6.	
Reading pe	رمر, في	Salli		Har. Hou	BOTT	40.	Bare	Kor, Leg.	Coo. Mar	mud	
1			1	1						1	
2			1	1						1	
3			1	1					1		
4	1		1		1					1	Ī
5			1	1						1	L
6			1	1						1	L
7	1		1		1			:			
8	1		1		1			:			
9	1		1		1			:			
10	1		1		1			:			
11	1		1		1			:	1		
12			1	1						1	_
13			1	1						1	
14			1	1						1	
15			1	1						1	
	1		1		1					1	
	1		1		1					1	
	1		1		1					1	
19	1		1		1					1	
20	1		1		1					1	
21	1		1		1						L
22	1 1			1							L
	1 1 1 1									1	
25	1 1			1						1	_
26	1			1		1				1	
27						1					L
28						1				1	
29						1					
30	1	1			1	1			1		+
31	1	1			1						+
32	1	1			1				_	1	L
33	1	_		1						1	
	1			1						1	
	1 1			1							
	7 18	3	21	9 7	15	4	0	0	8 0	0 27	
				Total Class Cover:							

Reach: 14							
Transect Number: 1							
	Class	Cover			Groui	nd Cover Material	
Reading pe Stasscanigla nonnative grasses Ribes arrem Sair Reading pe	Native non-native no vegetation	68.57143 62.85714 11.42857	No liant	Bate	ROCH Leaf Little !	Coarse moody debris	roud

Reach: 14													
Transect Number: 2 - not sampled	during pos	t clearance	surveys bec	ause the are	ea had not l	een cleare	d						
			Cover					ı.	Ground Co	ver Materia	ĺ		
		ive					sple	ø	Coarse mood	y debris			
Danding was fact.	Mative	Monnative	Both	Modalit		Bare	ROCHLOOPILE	eatlitte	coaise	water	mud	concrete	
	7	4	♦	4		φ,	4.	<u> </u>	C	7	6.	C	
2					-								
3													
4													
5													
6													
7													
8													
9													
10													
11 12 13													
12													
14 15					-								
16													
17													
18													
19													
20					-								
21 22													
23 24 25													
24													
25					-								
26 27													
28													
29													
30													
31													
32													
33													_
34													
35													
36													
37													
38													

Reach: 14																			
Transect Number	er: 2 - n	not sample	d during p	ost clearan	ce surveys	because th	e are	ea had not	been clea	red									
					ass Cover								Ground C	over Mat	erial				
Reading per foo	ot:		Walive	Honnati	de Born	40 plan	Ç		Bate	ROCKIC	obble	Leaf Little I	Coarse mo	unater water		mud	jos	i de ^{že}	
39																			
40																			
41																			
42																			
43																			
44																			
45																			
Totals	0			0	0	0	0			0	0	0		0	0		0	0	
			Total Cla	ass Cover:															
			Native			0													
			non-nat	ive		0													
			no vege			0													

Reach: 15											
Transect Number: 1											
Vegetation species	Class Cover					Grour	nd Cover M	aterial			
Reading pe Cyperus 50. Romnative glass Wahingtonia rodusta		No Plant		baje.	ROCH Leaf Little 1	25	debris	mud	waterwithle	innasp.	sand
Reading pe Cr (* 4*	4 4 6	1		⊗ °	K. A.	<u> </u>	74	6.	7	1	50
2		1	_							1	
3		1								1	
4		1								1	
5		1	_							1	
6		1								1	
7		1								1	
8		1								1	
9		1	_							1	
10		1								1	
11		1	_							1	
12		1	_							1	
14		1								1	
15		1	_							1	
16		1	_							1	
17		1								1	
18		1								1	
19		1								1	
20		1								1	
21		1								1	
22		1	_				1				
23		1	_				1				1
25 25		1 1	_				1				1
26		1	_				1				
27		1	_				1				
28		1	_				1				
29		1					1				
30		1					1				
31		1	_				1				
32		1					1				
33		1	_				1				
34		1	_				1				
35		1					1				
36		1	_				1				
37		1	_				1				
38		1					1				

Reach: 15											
Transect Number: 1			_								
Vegetation species	Class Cover					Groui	nd Cover Mater	rial			
ass tobusta					%	20	debris		withlen	18 cg.	
Reading pe Cyperus 90. Ronnative grass Wahingtonia robust 39	Native Monnative Both	No blant		Bare	ROCH/Colonie Leaf Little 1	Coarse moc	water m	ud water	(with	concrete	sand
39		1	-				1				
40		1	_				1				
41		1	_				1				
42		1	-				1				
43		1	_				1				
44		1	_				1				
45 46		1 1	_				1				
47		1	_				1				
48 1	1	-	_		1						
49 1	1		_		1						
50 1 1	1				1						
51 1 1	1		_	1							
52 1	1			1							
53		1					1				
54		1					1				
55		1					1				
56		1					1				
57		1	-				1				
58		1	_				1				
59 60		1	_				1				
61		1	_				1				
62		1 1	-				1				
63		1	-				1			1	
64		1	-							1	
65		1	-							1	
66		1	_							1	
67		1	-							1	
68		1								1	
69		1								1	
70		1								1	
71		1	_							1	
72		1	_							1	
73		1	_							1	
74		1	_							1	
75		1	_							1	
76		1								1	

Reach: 15																	
Transect N	umber: 1		_					_									
	1	etation species	-		Class	Cover		_			l l	Ground	Cover Ma	aterial			
Reading pe		, ges	, daysta	Notive Not	ative		No Plant		Bate	ROCH (CO	odle Leaf Litter	, see			water with L	concrete	sand
77			-			•		_	_	`				`		1	,
78			-					<u> </u>								1	
79			-													1	
80			-					_ <u> </u>								1	
81			-					<u> </u>								1	
82			_					<u> </u>								1	
83			_					<u> </u>								1	
84			_				:									1	
85								<u></u>								1	
Totals	3	3 :		0	5		0 80)		2	0 3	0	35	0	0	44	1
				Total Class Cove	er:												
				Native			0										
				non-native		5.8823											
				no vegetation		94.117	65										

Reach: 15														
Transect Number: 2	_													
	_		Class	Cover					Grou	nd Cover Ma	aterial			
	-									:6			٠٥.	
*ø									Coarse mood	depriv		waterwithle	Masi	
gjicat			æ				solo:	,	og	4		"VIE	Ż,	
. chiis 3 sq.		e	nativ		dant		"ICOP+	Litter	ise mo	~		or wit.	æe	
Reading ne Osti		Native	Monnative	BOTH	No Plant	Baic	80CK1	Legi V	Coars	wate.	mud	wate.	concrete	
Reading pe Oistichis spicata 1	-		,	•	1	•	ROCKICODOILE				`		1	
2	-				1								1	
3					1								1	
4					1								1	
5					1								1	
6	_				1								1	
7					1								1	
8					1								1	
9	_				1								1	
10	_				1								1	
12	-				1 1								1	
13	_				1								1	
14	-				1								1	
15	_				1								1	
16	-				1					1				
17	-				1					1				
18					1					1				
19					1					1				
20	-				1					1				
21	_				1					1				
22	-				1					1				
23	_	1								1				
24	_	1			1					1				
25 26	_				1 1					1				
27	_				1					1				
28 1	_		1							1				
29	_				1					1				
30 1			1								1			
31					1						1			
32					1				1					
33					1				1					
34					1				1					
35	_				1				1					
36					1				1					
37	_				1				1					
38					1						1			

Reach: 15												
Transect Number: 2		-				_						
		_		Class Cover					I	Ground Cover M	aterial	1
Reading pe Oistichies spical	LADIUS 20.		Mative	Non-native Both	Mortani		&ate	ROCHICOONE	leaf litter	Coarse mooth debris	mud water with Lemma so.	
39					1						1	
40					1	_					1	
41		_			1	_				1		
42		_			1	_				1		
43		_			1	_				1		
44	_	-	4		1					1		
45 1 46		_	1		1	_		1			1	
47		-			1	_		1			1	
48		-			1	_					1	
49		-			1	_		1				
50		_			1	_		1				
51		_			1	_		1				
52					1			1				
53					1			1				
54					1	<u>. </u>		1				
55		_			1	_		1				
56		_			1	_				1		
57 1		_	1			_					1	
58 1	_	-	1		1					1	1	
59 60		_			1					1 1		
61	_	-			1	_		1		1		
62		_			1	_		т		1		
63		_			1	_				1		
64					1	-				1		
65					1	_				1		
66					1	_				1		
67					1						1	
68					1	_					1	
69					1	_					1	
70					1	_					1	
71					1	_					1	
72		_			1	_					1	
73 74		_			1	_					1	
75		-			1	_					1	
76		_			1	_					1	
70					1						1	-

Reach: 15													
Transect Number: 2													
			,	Class Cov	/er					Ground Cover M	laterial	'	
Reading pe Oistichiis spice	Typhasa.		Wative Water	Monnative St	in Molar	Ç	Bare	Rock/Cobble	lea litter	Coarse moody debrits	mud water	with Lennaso.	
77						1						1	
78		_				1						1	
79		_				1						1	
80		_				1						1	
Totals 3	2	_	5	2	0	73	(9	6	0 26	5 10	0 29	
		-	Total Class	Cover:		_	-						
			Native		10								
			non-native		4								
			no vegetati	on	91.25								

Reach: 16										
Transect N	umher: 1				-					
Transcerit		Class	Cover		-		Ground Cov	l ver Material		
		Cidos	Cover		-		Ground Co.	/CI IVIACCITA		
Reading pe	nonnative diass nonnative herb	Native Nonnative	BOAN	Modaux		88te	ROCHICODONE Leaf Litter	coasemood	debris nater	mud
1				1			1			
2				1			1			
3				1			1			
4				1			1			
5				1			1			
6				1			1			
7	1	1	-				1			
8	1	1	-				1			
9	1	1	=				1			
10	1	1	=				1			
11				1			1			
12				1			1			
13	1	1	=				1			
14				1			1			
15				1						1
16				1			1			
17	1	1	=							1
18				1						1
19		1	-		_		1			
20		1					1			
Totals	6 2	0 8	0	12		0	8 9	0	0	3
		Total Class Cover:								
		Native	0							
		non-native	40							
		no vegetation	60							

Reach: 17																
Transect Nu	ımber: 1	-					_									
	etation spe	cies		Clas	s Cover		_				Groun	d Cover Ma	aterial			
108	ctation spc	Cics		Cias	0000		_				Groun	.6	accitat			
Reading pe	r foot:		Matine	Nonnative	&o ^{tin}	Mo Light		&ase	ROCHCOBI	e Leaflither	Coarse mooth	debris	mud	concrete	grouted ripre	8
	1 1001.	-		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \						1		4.	ν.		*	
2		-	_			1 1	_			1						
3		-	-			1	_			1						
4		-	-			1	_			1						
5		-	_			1		-		1						
6		-	_			1	_	-		1						
7			_			1	_			1						
8			-			1	_	-		1						
9		-	_			1				1						
10		-				1				1						
11		-				1	_			1						
12		-				1				1						
13		-				1	_			1						
14		-				1	_			1						
15		-				1				1						
16						1				1						
17		-				1	_			1						
18						1				1						
19						1				1						
20						1				1						
21						1				1						
22		_				1				1						
23		_				1	_			1						
24						1	_			1						
25						1				1						
26						1				1						
27						1	_			1						
28						1				1						
29						1	_			1						
30		-				1				1					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Totals	0		0		0 0	30			1	0 30	0	0	0	(0	
			Total Class	Cover												
			Total Class	cover:		1										
			Native non-native)		-								
			no vegetat		100			-								
			no vegetat	.1011	100			-								
																
									1							

Reach: 17										
Transect Number: 1										
Vegetation species	Class C	Cover		T		Grour	nd Cover M	aterial	1	
Reading per foot:	Native Honnative	Both Hopiant	834e	ROCHICOBOR	Leaf Littlet	Coarse moody	debris uster	mud	concre ^{te}	grouted riprap
				_						

Reach: 18											
Transect N	umber: 1										
	getation species		Class Cover					Ground Cover	Material		
	non native grass	Native North	native rn	Modiant	·	Bate	ROCHCODIE		odydebiis	8	۵,
Reading pe	40,	49, 40,	Both	40				rec Co.	No	sand	mud
1				1		1					
2				1				1			
3				1				1			
4	1		1					1			
5				1				1			
6				1				1			
7				1							1
8				1							1
10		-		1				1			1
11	1		1					1			1
12	1		1								1
13	1		1								1
14	1		1								1
15	1		1								1
16	1		1								1
17	1		1								1
18	1		1		•			1			
19				1				1			
20				1							1
Totals	9	0	9	0 11		1	0	8	0 0	0	11
		Total Class Cover	:								
		Native		0							
		non-native		45							
		no vegetation		55							
										1	

Reach: 18													
Transect Nur	mber: 2												
	tation spe	cies		Class	Cover				Grou	nd Cover M	aterial		
										Coatse mood	;%		
											'96p,		
				.,e				able	٠.	600,	4		
			.Je	nativ	10	olant		"Icop	c Litter	sen	ď	X	
Reading per	foot:		Mative	Monnative	BOTH	40 Plant	Bare	ROCHCODDIE	'6g'	Cogr	water	sand	mud
1						1							1
2						1							1
3						1							1
4						1		1					
5						1							1
6						1			1				
7						1							1
8						1							1
9						1							1
10						1							1
11						1							1
12						1	-		4				1
13						1			1				
14 15						1 1			1				1
16			_			1	-						1
17						1			1				1
18						1			1				
19						1			1				
20						1			1				
Totals	0		0	0	C			0 1	7		(0 0	12
			Total Class	Cover:									
			Native		C								
			non-native		C								
			no vegetat	ion	100)							

Reach: 19										
Transect Number: 1										
		Class	Cover				Ground Cov	er Material		
								coarsemoods	;5	
Reading pe Sinus Canarensis								,	ge,p,	
aten		Monnative				Rock/Cobble		000	\	
_E can ^e	e	nativ		dant		"Icop.	(litter	sene		,e ^{te}
Reading ne ginus	Mative	MOUL	BOTT	Modaux	Baie	80CK	eat	Coar	Sano	concrete
1			•	1		•			,	1
2				1						1
3				1						1
4				1						1
5				1			1			
6				1			1			
7				1		1				
8				1					1	
9				1			1			
10				1			1			
11				1					1	
12				1					1	
13				1					1	
14				1					1	
15				1					1	
16				1					1	
17				1					1	
18				1					1	
19				1					1	
20				1					1	
22				1 1					1 1	
23				1					1	
24				1			1			
25				1		1				
26				1		1				
27				1		1				
28				1			1			
29				1		1				
30				1		1				
31				1					1	
32				1					1	
33				1					1	
34				1		1				
35				1	-		1	-		
36				1		1				
37				1		1				
38				1					1	

Transect Numb	er: 1										
			Class	Cover				Ground Cov	er Material		
									coarsemoods	vis	
	sis								,,,	ger	
	water		.ive		×		ROCKICODDIE		NOOO	`	0.
	s con	xive	n'hat.	*/	Plant	.0	H _{CO} .	of Little	arse	6,	acrette
Reading pe 🤄		Wative	Monnative	BOTH	MO Blant	Bare	800	√60°	Coo	Sall	concrete
Reading pe 39					1					-	L
40					1					1	
41					1					1	L
42		_			1		1				
43					1		1				
44	_	_			1		1			1	1
46					1		1				-
47					1		1				
48					1			1			
49					1			1			
50					1					1	L
51	1		1					1			
52	1		1							1	L
53	1	_	1					1			
54	1		1					1			
55	1		1				1				
56	1		1				1				
57 58	1		1				1				
59	1	_	1				Т.	1			
60	1		1					1			
61	1		1					1			
62	1		1					1			1
63	1		1					1			
64	1		1					1			
65	1		1					1			
66	1		1					1			
67	1		1					1			
68	1		1					1			
69	1		1					1			
70 71	1		1					1 1			
71	1	<u> </u>	1					1			
73	1	<u> </u>	1					1			1
74	1		1					1			
75	1		1					1			
Totals	25	0		0	50	0	18			24	1 4

Reach: 19										
Transect Number: 1										
		Class	Cover					ver Material		
Reading pe Qinus Canarensis	Matine	Monnative	BOIL	Mo blank	\$ate	ROCHICODORE	Led Litter	coatemood	debris	concrete
	Total Class	Cover:								
	Native		0							
	non-native		33.33333							
	no vegetat	ion	66.66667							

Reach: 19														
Transect N	umber: 2			_				_						
	Vec	getation species		_		Class Cover		-				Ground Cov	ver Material	
	Eriogonum fasciculatum	otul.						-						
	laturi	n squamatur. Lotus scoparius	oha									Coateemoody	;%	
	cicuit	a sdiv	whork har he grat	5									860,	
	2 485° KU	in agins od	74. Of. 9.			.0.				we.		094	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	anun. Ospai	Scot, Sto,	ative		0	ative	ant			Copr	itter	o Mo	. e	
	iogo gide	n salv	ORTH		Mative	Non-ustine Both	Mobiant		Bare	ROCKICOBOLE	leaf litter	Carse	water sand concrete	
Reading pe	€	, b,	, Co	_	4,	4 80			δ°	<i>δ</i> 2	V	G	7, 50, 0	
1				_			1	_		1				
2				_			1	_		1				
3				_			1	-					1	
4				_			1	-		1				
5							1	-		1				
6							1						1	
7							1			1				
8							1			1				
9							1						1	
10							1						1	
11							1						1	
12							1	_		1				
13							1	_		1				
14							1	-					1	
15							1						1	
16							1	-					1	
17							1	-		1				
18							1	-		1				
19							1						1	
20				_			1	_					1	
21							1	_					1	
22				_			1	-					1	
23							1						1	
24							1			1			_	
25							1	-					1	
26							1			1			_	
27				_			1			1				
28							1	-		1				
29							1						1	
30							1			1				
31							1			1				
32							1			1			1	
33							1	-					1	
34				_			1	-		1			1	
35							1	-		1				
36							1	-		1				
37							1	-		1			1	
37							1						1	

Reach: 19													
Transect N	umhor: 2			_									
TT aTTSECT IN		getation species				Class Cover					Ground Cov	ver Material	
	ve	*///				Ciass Cuvei					Ground COV	rei iviateriai	
Reading pe	Friogonum fasciculatum	n squaratur Nedicago po	montalive st	\$5	Majive	Nornative Both	NO Plant	Bate	Rock Colonie	lea litter	Coatse moody	debris sand concrete	
38							1		1				
39							1		1				
40							1					1	
41							1					1	
42							1		1				
43							1					1	
44							1					1	
45							1		1				
46							1			1			
47							1					1	
48							1					1	
49				_			1		1			_	
50				_			1		1				
51				_			1		1			1	
52				_			1					1	
53				_			1					1	
54				_			1					1	
55		1		_	1		1			1		1	
		1		_	1		4			1			
56				_			1	-				1	
57				_			1					1	
58				_			1					1	
59							1					1	
60							1					1	
61							1					1	
62							1					1	
63				_			1		1				
64							1		1				
65							1		1				
66							1					1	
67							1					1	
68							1					1	
69							1					1	
70		1				1						1	
71							1		1				
72							1		1				
73							1		_			1	
74				_			1		1				
	i		1						1				

Reach: 19																	
Transect N	umber: 2					_											
		Vegeta	ation species	<u> </u>		_		Class Cover			1		Ground Co	ver Materia	al		
Reading pe	Eriogonum fasciculatum	partum sol	Janatuh M		north's north ative B	85°5	Wative	Notinative Both	No biant	Bate	ROCHLCOOOLE	leaf litter				concrete	
75									1		1						
76									1		1						
77									1		1						
78									1		1						
79									1						1	L	
80									1						1		
81									1						1		
82									1						1	L	
83									1		1						
84									1				1				
85	1						1				1						
86									1				1				
87	1				1				1				1				
88	1						1						1				
89		1					1						1				
90		1					1						1				
91		1					1						1				
92		1				_	1						1				
93		1				_	1						1				
Totals	3	5	1	1	1		8	1	1 83		1 37	1	1 () () 44	1	
						_	Total Class	Cover:		-							
							Native	9.677	119								
							non-native										
							no vegetat										
												1					
												1					
L	1							L				1	1	1			

Reach: 21										
Transect Number: 1										
Vegetation sp	pecies		Class	Cover				Ground Cov	er Material	·
Reading per foot:		Matine	Mornative	Both	No Pibrit	Bate	ROCHICOONE	Leaf Litted	Coarse moody	debris
1					1			1		
2					1					1
3					1			1		
4					1			1		
5					1					1
6					1			1		
7					1					1
8					1			1		
9					1					1
10					1					1
11	_				1			1		
12	_				1					1
13					1					1
14					1					1
15	_				1			1		
Totals	0	0	0	0	15	0	0	7	0	8
	_	-	_							
	_	Total Class	Cover:	•						
	_	Native		0						
	_	non-native		0						
	_	no vegetati	on	100						
	_									
	_									

Reach: 22															
Transect Nu	ımber: 1														
	Veg	etation spe	ecies			Class	Cover				Grou	nd Cover Ma	aterial		
Reading pe	Arternisis dou	gasiana da	asses Ricinus commi	grii ^{ts}	Mative	ative		NO Plant	8age	ROCHCODDIE				sand	
1	1	•			1	`	· ·	`	•	,	1	-			
								1			1				
3								1			1				
4								1			1				
5	1				1						1				
6 7	1				1			1			1				
8								1 1			1 1				
9	1				1			1			1				
10	1				1						1				
11	1				1						1				
12	1				1						1				
13	1				1									1	
14								1		1					
15								1			1			1	
16 17								1 1						1	
18								1			1			<u> </u>	
19								1		1	_				
20								1		1					
21								1						1	
22								1						1	
23								1		1					
24								1		1					=
25 26								1		1				1	=
27								1			1			1	\dashv
28		1				1								1	
29								1						1	
30								1						1	
31								1			1				
32								1						1	
33								1						1	=
34 35								1 1						1	=
36								1						1	\dashv
37								1			1			-	
38								1			1				

Reach: 22															
Transect No	umber: 1														
	Veg	etation spe	ecies			Class	Cover				Grour	nd Cover M	aterial		
Reading pe	Artemisiadou	non native es	asses Richus contro	igni ^s	Walive	ative		No Plant	434e	ROCHICOBOR				çand	
39	`	•	`		`	`		1		`	•			1	
40								1			1				
41								1			1				
42								1			1				
43								1		1					
44								1			1				
45								1						1	
46								1						1	
47								1			1				
48		1				1					1				
49		1				1					1				
50								1			1				
51						4		1			1				
52		1				1					1				
53 54			1 1			1					1				
55			1			T		1			Т.			1	
Totals	8	4	. 2		8	6	0		0	7	30	0	0	18	
		<u> </u>								,	30				
					Total Class	Cover:									
					Native		14.54545								
					non-native		10.90909								
					no vegetati		74.54545								

Reach: 22								
Transect Number: 2								
	Vegetation species	Class	Cover			Grou	nd Cover Material	-
							;6	
Reading pe Gilia angeleri	Hedera helit Lotus scoparius non native grass						Coarse mooth debris	
aleri	s, elit sogill real	Je., 1				whe a	,00 ⁶⁴	
ange	ierahi issor natih	ing matile		alant		illog clitte.	ise no	(e ^{xe}
Reading pe Gilio	kedera nelit Lotus scoparius non native et ass	Native Norrhative	BOTT	No bisur	Bare	ROCH/Cobble Leaflitter	coatse nater sand	concrete
1	1	1				1		
2				1			1	1
3				1		1		
4				1		1		
5				1		1		
6				1		1		
7				1			1	
8				1			1	
9				1			1	
10				1				1
11				1			1	
12				1			1	
13 14				1			1	
15				1				
16				1			1	
17				1			1	
18				1			1	
19				1			1	
20				1				L
21				1		1		
22				1		1		
23				1			1	L
24				1		1		
25				1			1	
26				1			1	_
27				1		1		
28	1	1				1		
29	1	1		1		1		
30				1	-		1	
31				1		1	1	-
32 33				1		1 1		+
34				1	-	1		
35				1		1		
36				1		1		1
37				1		1		+ -
38				1		1		
				±		-		

Reach: 22																
Transect Nu																
	\	/egetatio	n species				Class	Cover					nd Cover M		T	
	nsi ^s	٠.	.ö.	is in	કું.						.0.		.8	debris		
Reading pe	Cilia arkelerais	zdera helit	Lotusscopari	non native at a		Mative	Monnative	&o ^{ti} l'	MO Plant	Bate	ROCHICODORE	leaf litter	Coatse mooth	nater	sand	concrete
39									1		1					
40									1						1	
41				1			1								1	
42									1						1	
43				1			1								1	
44				1			1					1				
45				1			1								1	
Totals	0	1	2			2	5	0	38		0 9	10	0	C		
						Total Class	Cover:									
						Native		4.44444								
						non-native		11.11111								
						no vegetati	on	84.4444								

Reach: 22		_		
Transect Number: 3				
Vegetation species	Class Cover	_	Ground Cover M	 aterial
Reading pe Arternisia du glain apaine 1	5.035 65761			
Siano			ROCH COPIE TO COSTSE MODE	edris
Cuello ine			.0.	H _{QE}
i sparing spar	xiv ^e ox		copple ret moon	
*emis dium	Native Nonnative Both No Plant	Bare	ROCK CORPE MOOF	water sand
Reading pe	420 400 800 400	89.	δρ.	71,0 29.
1	1		1	
2	1		1	
3	1			1
4	1		1	
5	1		1	
6	1			1
7	1		1	
9			1	1
10	1			1 1
11	1	_	1	1
12	1		1	1
13	1	_		1
14	1	_	1	
15	1			1
16	1		1	
17	1		1	
18	1			1
19	1		1	
20	1		1	
21	1		1	
22	1		1	
23	1		1	
24	1		1	
25	1		1	
26	1		1	
27	1		1	
28	1		1	
29	1		1	
30	1		1	
31	1		1	
32	1			1
33	1	-	1	
34	1		1	
35	1	-	1	4
36 37	1		1	1
	1		1	1
38	1			1

Reach: 22					_							
Transect Number: 3					_							
Vegetation	on species		Class Cover					Ground (
Reading pe Arternisia doli	dasana aparine	wative work	give goth	Wo blank		\$3ie	_{Rock} /Cobole	Leallittet C	315e MOOdY	debis	sand	
39 1		1						1				
40					1			1				
41					1			1				
42 1	1			1				1				
43 1	1			1				1				
44 1	1			1				1				
45 1	1			1				1				
Totals 5	4	1	0	4	10	0	10	24	0	C	1	1
		Total Class Cover:	:		-	-						
		Native	11.111	111								
		non-native	8.8888	889								
		no vegetation	88.88	889								

Reach: 24 Transect Number: 1A - not sample d during post clearance surveys because the area had not been cleared. Vegetation species Class Cover Grou Reading per foot: Reading per foot: Reading per foot:	und Cover Materia	nl		
Vegetation species Class Cover Grou	und Cover Materia	nl		
,e , ,	, y debris			
le la la la la la la la la la la la la la	"796p.			
l "e l "le "				0
	,1000,			grouted riprass
ive creating to plant a whole fixte	een	۸	<i>x</i>	"red"
Reading per foot: Reading per f	Nate	mud	xrash	\$ Out
1				
2				
3				
4				
5				
6				
7				
9				
10				
11				
12				
13				
14				
15				
16				
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21 22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34 35				
35 36				
37				
38				+

Reach: 24															
	umber: 1A	not sampl	ed during po	ost clearan	ce surveys b	ecause the	_ area had no	t been clear	ed.						
	etation spe				s Cover		_		I		Ground Cover Materia	l	-1	1	
	•	_									Coarse Moody debrits				
											debt				_
				,e					sole		ody			ioral	₹
			e	nativ		dant			"ICOP"	Litter	se me			xed(,,	
Reading pe	r foot:		Mative	Monnative	BOTH	Mobiant		Bare	Rock/Cobble	'ear,	coarse water	mud	rigell.	glouted riprat	
39			`			`		*						8	
40		_					-								
41		_					_								
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43		_													
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Totals	0		0)	0 (0)	C	0	0	0 (0	0	0	
			Total Class	Cover:											
			Native			0									
			non-native	_		0									
			no vegetat	tion	(0									

Reach: 24												
Transect Number: 1A - not sa	ampled during p	ost clearance surveys be	ecause the a	rea had not	been cleare	d.						
Vegetation species		Class Cover					Ground Co	ver Materia	l			
Reading per foot:	Native	Nonnative Both	Mobilant		\$3 ⁴ €	ROCK/CODDIE LESSLITEET	$\delta_{\mathcal{O}}$	Noedis	mud	Kagii	& Touted riprof	8

Reach: 24									
Transect Number: 1B - no	ot sampled during p	ost clearance surveys b	ecause the area had	l not been clear	red.				
Vegetation specie		Class Cover				Ground Cover Materia			
						Coarse mooth debris			
						, debi			
		e			ROCK/CORDIE LESS LITTES	ody		sand grouted intraf	۲
	e	nativ	alant		"Cot" (litter	sene		, xedi	
Reading per foot:	Mative	Norriative Both	No blant	Bare	ROCK, rest	coarse water	mud	sand grouter	
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Reach: 24																
	umber: 1B -	not sample	d during po	st clearanc	e surveys b	ecause the a	rea had no	t been clear	ed.							
	getation spe				Cover		-		<u> </u>		Ground Cov	ver Materia	ĺ	1		
Reading pe			Native	Nonnative	BOTH	NO Plant		&ate	ROCH COBBIE	Leaf Litter	coarse moods	water water	mud	sand	growedripes	8
39																
40							-									
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57							-									
58							-									
59							-									
60							-									
Totals	0		0	0	0	0		0	0	0	0	0	0		0 0	
			Total Class	Cover:												
			Native		C											
			non-native		C											
			no vegetati	ion	С)										
								-								
								-								
					1								1			

Reach: 24							
Transect Number: 1C - not sampl	ed during post clea	rance surveys	because the a	rea had not been cleared.			
Vegetation species		Class Cover			 Ground Cover Materia	ĺ	
		.ve					
	Mative Morres	in "	No Plant	.es			
Reading per foot:	Hative Honne	BOTT	40,	nates			
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Reach: 24										
Transect Number: 1C - not sampl	ed during po	ost clearance	e surveys b	ecause the a	rea had not	been cleared.				
Vegetation species		Class	Cover				 Ground Cover Materia	<u> </u>	·	
		Mornative								
	Mative	2-nati	<i>x</i>	Mo blant		*et				
Reading per foot:	435.	401.	BOTH	40,		nater				
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Reach: 24														
Transect Nun	nber: 1C - not sam	nple <mark>d during po</mark>	st clearanc	e surveys be	ecause the	area had not b	een cleared	d.						
Veget	tation species		Class	Cover						Ground Co	ver Materia	ıİ		
Reading per f	foot:	Native Paris	Monnative	BOHN	NO Plant		, vater							
81														
82														
83														
84														
85														
86														
87														
88														
89														
90														
91		_												
Totals	0	0	C	0	C)	0	0	0	(0) () ()
		Total Class	Cover:			_								
		Native		0										
		non-native		0										
		no vegetati	on	0										

Total Class Cover Percent Average for 24-2A,B, and C:

Native 6.9 non-native 17.85667 no vegetation 75.24667

Reach: 24 Transect Number: 2A							_				
					Class	Cover			Ground Cover M	laterial	
Reading pe & Widens frond of Brasica nies	s Heliahthus annus Mellotus sp. non-native st	ass nonnative herb	es Plantago lanceolata	Mativ	WON. Frative	Both Hopiant	∳ 2	je	addie es moot	ndeois godied in	Rud Hash
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11 12							1				1 1
13							1				1
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16							1				1
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20							1				1
21 22							1				1
23			1		1		_				1
24							1				1
25							1				1
25 26							1				1
27							1				1
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29							1			1	
30							1			1	
31 32							1			1	
32							1			1 1	
34							1			1	
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36							1			1	
37							1				1
38							1			1	
39							1				1
40							1				1
41							1				1
42							1				1
43							1				1
44		1			1						1

Reach: 24 Transect N																		
										Class C	Cover			G	round Cover N	//aterial		
Reading pe	Bidenstronds	50 Brasica nigra	Meildrie ed.	non native sta	nonnative herb	Plantagolance	Polygolin sp.	4	gative	ative		No Diant	Bate	Rock/Cobble Leaf.ir		uater unated	grouted tiprass	Togi,
45					1					1								1
46												1						1
47												1						1
48												1						1
49					1					1								1
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86												1					1	
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88												1					1	

Reach: 24																							
Transect No	umber: 2A									_					_								
												Class	Cover				·	Grou	nd Cover M	laterial			
Reading pe 89	bidens kanda	go brosica lileta	anthus annu	nellotus so.	non native of	nonnative he	yo Picisechioid	ges plantago lan	Polygoning	6.	native	Wornative	BOTT	HO Plant		&ate .	ROCHLCOBOR	lea litter	Coarse mod	water water	groutedrin	198 Unid	_{1,1} 25 ¹
89														1	_							1	
90														1	_							1	
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96										_				1	_							1	
97										_				1	_							1	
98										-				1	-							1	
99										-				1	-							1	
100										-				1	-							1	
101										_				1	_							1	
102										-				1	-							1	
103 104										-				1	_							1	
104										-				1	-							1	
Totals	1	1	1	1	4	1	6	5 3	1	-	0	30	0	75	-	0	0	6	()		12 4	7 1
Totals		-						3	_	-		- 30	J	75	-	0	U			,	7	7	, 1
										-	Total Class (Cover:			-								
										-	Native	2010.1	0		-								
										-	non-native		28.57143		_								
											no vegetation	on	71.42857							+			
																				1			
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																				1			
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Reach: 24											
Transect No	umher: 2B										
Transect IV	umber. 2b		Class	Cover				Ground Cov	∣ ⁄er Materia		
			Class	Cover				310unu Co	ei iviateria	<u> </u>	
								Coarse mood	obis		
	non-native stass	,						8	196	mud grouted into	8
	ive & high		sui.	×		aldle	, es	NOOL		, ilpro	
	isec.		ive anati	in plant	.0.	M _{CO} .	<i>flitte</i>	ise"	·e'	d weed	
Reading pe	non pict.		Native Nornative	BOTT HORISTE	Bare	ROCHCODDIE	Leaf Litter	Cog.	Mar	mud groute	
1	non native stass			1						1	
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3	1		1							1	
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Reach: 24										
Transect Number	r: 2D									
Transect Number	1. 4D	Class	Cover				Cround Co.	vor Matorial		
		Class	Cover				Ground Cov	ver Material		
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	1855 X85				•		×.	196	à	8
	ive & hidia	.ive	×		alde		100C		igro	
, s	ati seci	ive inati	y plant		100.	Little	,se "	.e. >	, xed	
Reading pe	ative Bass pictis ethioides	Native Norriative	BOTH MOPISITE	bate e	FOCL	reg,	Coatse mooth	water mud	gouted riors	
Reading pe Rock 1	1	1			-	leaf litter			1	
40		_	1						1	
41			1						1	
42			1						1	
43			1						1	
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Reach: 24															
Transect No	umber: 2B														
					Class	Cover		-				Ground Cov		ĺ	
Reading pe 77	nonnative of	es picis echioid	ş	Mative	Monnative	BOTT	Mohant		43te	ROCKICOODIE	Leaf Litter	Coaise moodi	uster uster	mud	grouted riptal
77							1								1
78							1								1
79							1	-							1
80							1	-							1
Totals	10	10		0	20	0		- -	(0	0	0	0	33	47
				Total Class	Cover:			-							
				Native		0		-							
				non-native		25		-							
				no vegetat	1	75		-							

Transect Number: 2C	Reach: 24											$\overline{}$	
Vegetation species Class Cover Ground Cover Material		umher: 2C	_										
Reading per United Properties (Properties	Transcet ive		_	Class	Cover			Ground (over Mate	rial			
1		vegetation species	_	Class	Cover			Ground	JOVET IVIALE	i iai			
	Reading pe	Ludwiga peploides	Kolia	Native Nonnative	Both	NO Plant	water						
1	1		-										
3	2		_										
Total Class Cover:			_				1						
S			_				1						
Total Class Cover:			_	1									
Total Class Cover:			_										
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12			_			1							
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15			_				1						
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17			_				1						
18 19 20 21 22 3 24 25 26 27 28 29 Totals 2 6 6 0 0 23 1 2 6 0 2 6 0 2 6 0 2 3 4 5 6 6 0 2 2 3 4 4 5 6 6 6 7 1 1 1 1 <t< td=""><td></td><td></td><td>_</td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			_				1						
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Totals 2 6 0 0 23 29 0<													
Total Class Cover:				6 0	0			0	0	0	0	0	
non-native 0			- - -	Native non-native	0								
no vegetation 79.31034				no vegetation	79.31034								

Reach: 24							
Transect Number: 2C							
Vegetation	n species	Class	Cover		Ground Co	ver Material	
Reading pe Judnië a pe qu	des Typha angustifolia	Native Nornative	Both Mostark	water			

Total Class Cover Percent Average for 24-3A,B, and C:

Native 8.896667 non-native 22.49 no vegetation 68.61333

Reach: 24													
Transect Number: 3A													
						Class Cover				Ground Co	ver Materia		
Reading pe Meilotus sR	. non-native et	nonnative he	picis echioides partago lanceolata Solanum doug	asil	Native	Non-native Both	Wo blank	88ie	Rock/Cobble Leaflitter	Coatse mood	y debris	mud	grouted riprat
1			1			1				1			
3 4			1 1			1	1					1 1 1	
5			1			1						1	
6							1					1	
7 1						1						1	
8 1	_					1						1	
9 1	L					1						1	
10			1			1						1	
11			1			1	1					1	
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15	1					1						1	
16 1						1						1	
17							1					1	
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19							1					1	
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21			1			1						1	
22							1					1	
23 1						1						1	
24			1			1						1	
25 1 26	<u> </u>					1	1					1	
27							1					1	
28			1			1	1					1	
29						-	1					1	
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31			1			1						1	
32			1			1						1	
33							1					1	
34			1			1						1	
35							1					1	
36							1		1				
37	1					1						1	
38			1			1						1	

Reach: 24											
Transect Number: 3A			_								
Transcer Hamber, 5A			-	Class Cover				Ground Co	ver Materia	<u> </u>	
			-	Class Cover				Ground Co	:6		
Reading pe Neilotus SP. Romative	e Blass non-native h	ero picis echioides plantago lanceolata solanum dou	gas ⁱⁱ	Native Norvative Both	No Plant	&ate	ROCHICODDIE	Leaflitter Coase mod	water	mud	godted ripras
39	1		-	1						1	
40		1	_	1						1	
41		1	-	1				1			
42	1		-	1				1			
43			-		1						1
44			_		1	_					1
45		1	-	1	1						1
47		1 1	_	1 1							1
48			-		1						1
49			-		1						1
50			-		1						1
51			_		1						1
52			-		1						1
53					1						1
54			_		1						1
55			-		1						1
56			-		1						1
57			-		1	_					1
58			-		1						1
59 60			_		1						1
61			-		1	_					1
62					1						1
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72					1				+		1
73 74					1						1
75			-		1	-					1
76			-		1						1
70					1						1

Reach: 24																								
Transect Number:	: 3A							-																
								-			Class Cove	er							Gro	ound Co	ver Mate	erial		<u> </u>
								-													:5			
		و		20		8	ă ^{to}	asii													depur			
Reading pe (Aeiliot)	rou.us	9(8)	nonnative he	picits et	. oides	ago lance of	danun dol	Bic			.0.						ROCKICODY	ve		so ^S	water water			Bottedriptap
, so	ys .	ine	ative	رک	uic	20°C	ing		.0.	,3	iide		ant				'Copy	, .×	ze ^l	·S.MO				edrik
Danding no a Relife	20U-II		Onth	aicis	alanti	,,,,	olani		Mative	Mouris	, ⊗oʻi	2	MO blant		&at'	e	OCKI	je Leafliř		oarse	water		mud	route
Reading pe 4	6 -		4.	Α,	Α,	ب ا)°		4	6	♦		4		φ,		4			<i>,</i>	74		4.	४
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85								-						1							1			1
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100														1										1
Totals	6	5	1		12	4	2		2	2	28	0		70		0		1	3	C)	0	38	58
									Total Class	Cover:														
									Native			2												
									non-native			28												
									no vegetat	tion		70												
																					1			

Reach: 24			
Transect Number: 3B	Vegetation species	Class Cover	Ground Cover Material
78	- Comment of Comment o		
Reading pe Ambrosia Psilostachias Telanthus T	Meilotus sp. non native grass ethioides prantago lancedata	Mative Monnative Both Monant	Bate ROCHICOSDIE Leaf Litter Coarse moody debris Rud grouted riprop
2 2		1	1
3	1	1	1
4	1	1	
5	1	1	
7	1	1	
8	1	1	
9	1	1	
10	1	1	1
11	1	1	1
12	1	1	1
13		1	
14		1	
15		1	
16			
17 18		1	
19		1	
20		1	
21	1	1	1
22	1	1	1
23	1	1	1
24	1	1	
25	1	1	
26	1	1	
27	1	1	
28	1	1	
30	1	1	
31	1	1	
32	1	1	1
33	1 1	1	1
34	1	1	1
35	1	1	1
36	1	1	1
37	1	1	
38	1	1	

Reach: 24			
Transect Number: 3B			
	Vegetation species	Class Cover	Ground Cover Material
Reading pe Ambrosia psilostachya 39	Mellotus SP. Romative grass echicides Plantago lanceolata	Mative Monnative Both Monant	Bare Rock/Coloble Leaf. Litter Coasse modification and Rock Routed riprass
39	1	1	
40	1	1	
41	1	1	
42		1	
43	1		
44 45	1 1	1	
46	1	1	
47	1	1	
48	1	1	
49	1	1	
50	1	1	
51	1	1	1
52	1	1	1
53	1	1	
54	1	1	
55	1	1	
56	1		
57 58			
59		1	
60		1	
61			
62		1	
63		1	1
64		1	
65		1	
66		1	
67		1	
68			
69		1	
70 71			
72		1	
73		1	
74		1	
75		1	
76		1	

Reach: 24												
Transect Number: 3B						_						
	Vegetati	on species			Class Cover				Ground Co	⊥ ver Materia	l	
Reading pe Ambrosia Psilostachiva Heilanthus	annus annus so	يخ د	zola ^{zo}	Native		No blant	Bale	ROCHICODOR				godred iprab
77						1						1
78			-			1						1
79 80			-			1						1
81						1						1
82						1						1
83						1						1
84						1						1
85						1						1
86						1						1
87						1						1
88						1						1
89						1						1
90						1						1
91						1	_					1
92 93						1 1						1
94						1						1
95						1						1
96						1						1
97						1						1
98						1						1
99						1						1
100						1						1
101						1						1
102						1						1
103						1	-				-	1
104 105						1						1 1
105						1						1
107						1						1
108						1						1
109						1						1
110						1						1
111						1						1
112						1						1
113						1						1
114						1						1

Reach: 24																	
Transect Nu	ımber: 3B																
		Vegetation species					Class	Cover					Ground Co	ver Materia	al		
Reading pe	Ambrosia psilv	stachya	ger picisechioides	Mantago lance	ola ^{to}	Native N	onnative	₽ oth	MO blant	&ate	Rocklobble	Leaf Litter	Coarse mooth	uated unated	mud	giouted riprof	?
Totals	2	1 22 10	9	4		1	45	0	68		0 0	0	0	C)	52 62	
						Total Class Co	ver:										
						Native		0.877193									
						non-native		39.47368									
						no vegetation		59.64912									

Reach:											
Transect Number:											
Vegetation species		Class Cover	•				Ground Cover M	laterial			
Reading pe Scitous Sq.	Astive Appri	ative Both	Moby	ant	mater						
1				1	1						
2				1	1						
3				1	1						
4				1	1						
5				1	1						
6				1	1						
7				1	1						
8				1	1						
9				1	1						
10				1	1						
11				1	1						
12				1	1						
13				1	1						
14				1	1						
15				1	1						
16				1	1						
17 1	1				1						
18 1	1				1						
19 1	1				1						
20 1	1				1						
21 1	1				1						
Totals 5	5	0	0	16	21	0 (0	0	0	0	
	Total Class Cover										
	Native	23.8	30952								
	non-native		0								
	no vegetation	76.1	19048								
		1	ļ.							l .	l .

Total Class Cover Percent Average for 24-4A,B, and C:

Native 1.39 non-native 20.99667 no vegetation 77.33667

Reach: 24					
Transect Number: 4A					
			Class Cover		Ground Cover Material
Reading pe Chenopodium	in s	**			Coatse moody debris roud grotted riptar
	Ludwig a Dedoide's Reliative 20. Ron rative 81855 non rative 14	erb Pictis echicides Plantago lanceolata Scirpus californica			, 9 ₆₀ ,
hing	, regin so. so, su	e, ide suce altou	l e	%e ,	add ⁴ infall
2000	igia V atus adiale adiale	echile agold sca.	a satira sant	(Copt inter	edin
Deading as thene	Ludwig a belight Wellognes & Lour Lagine Blass Lour Lagine Laging	erb Pictis echioides Phantago lanceolatus californica	Native Norvative Soth Nopart	Bare Rock Cobbe Leaf Litter	Coarse modified rater raid grouted ripted
Reading pe O		X		δ. <i>k</i> . Δ.	
1		1	1		
2	1	1	1		
3		1	1		
4		1	1		
5		1	1		
6			1	1	
7			1		
8	1		1		
9	1		1		1
10		1	1		1
11	1		1		1
12			1	1	1
13		1	1		1
14	1		1		1
15	1		1		1
16	1		1		1
17		1	1		1
18			1	1	1
19	1		1		1
20		1	1		1
21	1		1		1
22		1	1		1
23		1	1		1
24			1	1	1
25			1	1	1
26	1		1		1
27		1	1		1
28			1	1	1
29			1	1	1
30		1	1		1
31		1	1		1
32		1	1		1
33			1	1	1
34		1	1		1
35		1	1		1
36	1	1	1		1
37	1		1		1
38	1		1		1
39	_	1	1		
40	1		1		1
41	1		1		
7.4			4		

Reach: 24										
Transect Number: 4A										
					Class Cover				Ground Cover Material	
Reading pe Chenopolius 42	Ludwiga peoloides Mellotus sp. norrati	we glass non-native herb	noide ⁵ Plantago lanceolata Scirpus califor	nica _{Watu} e	Worrative 80th	NO Blant	Bate Roch(Colors	e Leat litter	Coarse moody debris	a grouted riprass
42	1				1	+ -				1
43	1			_	1					1
44	1				1					1
45	1				1					1
46	1				1					1
47	1				1					1
48	1				1					1
49	1				-	1				1
50	1				1					1
51	1		1	_	1					1
52			1	_	1			1		1
53			1	_	1					1
54			1	_	1					1
55			1		1					1
56			1		1					1
57			1		1			1		
58 1					1	+		1		
59			1		1			1		
60					_	1				1
61						1				1
62						1				1
63						1				1
64						1				1
65						1				1
66						1				1
67						1				1
68						1				1
69						1				1
70						1				1
71						1				1
72						1				1
73						1				1
74						1				1
75						1				1
76						1				1
77						1				1
78						1				1
79						1				1
80						1				1
81						1				1
82						1				1

Reach: 24																		
Transect Number: 4A										_								
Transect Number, 4A								Class Cover		_				Ground Cove	r Matorial			
								Class Cover		_				Ground Cove	riviateriai			
	, album	xe ^s	,		es Plantago lanceolata	alifornica								Coarse moody debris Rud grouped riprati				
	Jan.	loi ^c	11853 VE	36. OS	es aceoir	cornic						. 0		240	5		98.	
odiu	.30er	· .550.	yes iye'	chioil	Olari	calife		*ive	×			abble	*e	wool			ripis	
anoly	LNIEL	allotte arrai	2.nat	isec	riage rous		xive o	,nat xn	Slatt		.0	$\mathcal{A}_{\mathcal{C}_{\mathcal{C}}}$	glike	arse .	*e'	6.	aitell	
Reading pe	ring	Nellatus so. non nat	we grass non native he	picis echioide	big, com,		Mative Mon	native Roth	NO Plant		Bare 6	ock/Cobble	leaf litter	Cos	water m	30	glouted intro	
Reading pe Chenopolius									1								1	
84									1								1	
85									1								1	
86									1	_							1	
87									1	_							1	
88									1								1	
89									1								1	
90									1								1	
91									1								1	
92									1				· 				1	
93									1								1	
94									1								1	
95									1								1	
96									1								1	
97									1	_							1	
98									1	_							1	
99									1	_							1	
100									1	_							1	
101									1	_							1	
102									1	_							1	
103									1	_							1	
104									1	_							1	
105									1	_							1	
106									1	_							1	
107									1	_							1	
108									1	-							1	
109									1								1	
110									1								1	
111									1								1	
112									1								1	
113									1								1	
114									1								1	
115									1								1	
116									1								1	
117									1								1	
118									1								1	
119									1								1	
120						_			1			_			_		1	
Totals 1	2	11	9 3	16	6	5	5	44	0 70	-	0	0	4	0	0	55	61	
							Total Class Cove	er:										

Reach: 24										
Transect Number: 4A										
		C	lass Cover				Ground Cover Materi	al		
Reading pe Chenopodium album Neilotus sp. non-native glass non-native herb Pichis echicides Scirpus C	lifornica	Native Norna		wo Plant	Bare Rock/Cobb	e Leat litter	Coatse mody debrits	mud	grouted riprato	
		Native	4.166667							
		non-native	36.66667							
		no vegetation	58.33333							

Reach: 24															
	lumber: 4B			_											
Transect I	GIIIDCI. 4D					Class	Cover					Ground Cov	⊥ ver Material		
				_		Class	COVCI					diodila co	ver iviaterial		
	e Chenopodium album		picis echicides plantago land	va ^x o								Coarse mood	phis		
	in sir		. xe ⁵	eoit						. 0		8	1 ge		200
	odiu.	1250.	chiole plan			s _{iv} e		х.		aldle	*et	, _N O0 ^U			riple
	anope	lotic	iset stable		.ive	2-Nat	~	Plane	.0,	HO	Elitte	ase"	*e'	8.	Jite0
Reading p	e Che Me	`	piciis echioides		Mative	Monnative	BOTH	Mobiant	Bare	ROCHCODDIE	Leaf Littler	Coo	water	mud	grouted riprate
1	L							1							
2	2			_				1							
3				_				1							
4				_				1							
				_				1							
(_				1							
-								1							
8								1							
								1							
10				_				1							
11		1		_		1									
12				_				1							
13		1		_		1									
14				_		1		1							
15		1				1		1						1	
16		1				1								1	
17		1		_		1								1	
18		1				1									
19		1		_		1								1	
20			1	_										1	
			1	_		1		1							
22			1	_		1		1						1	
		4	1	-		1								1	
23		1				1								1	
24		1	4			1								1	
25			1			1								1	
26			1			1								1	
27			1			1								1	
28		1				1								1	
29								1						1	
30			1			1								1	
31						1								1	
32			1			1								1	
33			1			1								1	
34			1			1								1	
35								1						1	
36			1			1								1	
37			1			1								1	
38	3		1			1								1	

Reach: 24										
Transect Number: 4B				_						
Transect Number: 45		Class	Cover	_			Ground Co	ver Material		
		Cidos	Cover	_			Ground Co			
alburi.	**************************************							depuis		
intug, to.	ides niceo				د.	e	6	40		2/26
apodit aus s'i	echild agolia	ative	ant.		(copy)	iter	° noc			dill
Reading as Cheno, Neillo	Picis echioides Plantago lanceolata	Wative Worringtive	BOTH NO START		Bare Roch(chic	e Leaflitter	Coarse mooth	, atel	mud	godted riprat
Reading pe Chenopodium album Meillotus 59.	1	P P	8 6		Δ, <i>κ</i> ,		O .	7	4.	8
40	1	1 1								1
41	1	1	1	_						1
42			1	_						1
43			1	_						1
44			1	-						1
45			1	-						1
46			1	_						1
47			1	_						1
48			1							1
49			1	-						1
50			1							1
51			1	_						1
52			1							1
53			1	_						1
54			1	_						1
55			1	_						1
56			1	-						1
57			1	_						1
58			1	-						1
59 60			1 1	_						1
61			1	-						1
62			1	-						1
63			1	-						1
64			1	-						1
65			1	-						1
66			1	-						1
67			1	_						1
68			1	_						1
69			1	_						1
70			1	-						1
71			1							1
72			1							1
73			1							1
74			1							1
75			1	-						1
76			1							1

Reach: 24																
Transect N	umber: 4B															
						Class	Cover					Ground Co	ver Mater	ial		
	_			_		0.000							.6-			
	Cheropodium album	'88.	picis echicides	go lance data		rive		X.		able	*6 ₇	Coatse modi	. debris			, ripra ^Q
Reading pe	Cheriop Weill	o ^{co}	piclisec plants	%	Mative	Won-native	BOETS MC	Plant	Bare	ROCHICODOR	Leaf Litter	coarse	water	mud		Brouted riprato
77								1								1
78								1								1
79								1								1
80								1								1
81								1								1
82								1								1
83								1								1
84								1								1
85								1								1
86								1								1
87								1								1
88								1								1
89								1								1
90								1								1
91								1								1
92								1								1
93								1								1
94								1								1
95								1								1
Totals	1	10	10	4	C	25	0	70	0	0	0	0		0	24	57
					Total Class	Cover:										
					Native		0									
					non-native	_	26.31579									
					no vegetat	tion	73.68421									

Reach: 24																
Transect Numb	er: 4C															
Vegetat		cies			Class Cover						Ground	Cover M	lateria			
Reading per foc			Mative	Mon.n			plant	Bare	ROCHCODO	e Leatlitter		nody debrie	, ,	mud	concrete	
1							1						1			
2							1						1			
3							1						1			
4							1						1			
5							1						1			
6							1						1			
7							1						1			
8							1						1			
9							1						1			
10							1						1			
11							1						1			
12							1						1			
13							1						1			
14							1						1			
15							1						1			
16							1						1			
17							1						1			
18							1						1			
Totals	0			0	0	0	18		0	0	ס	0	18	() ()
			Total Cla	ass Cover:				-								
			Native	.55 65 761.	•	0										
			non-nati	ive		0										
			no veget			100		_								
			110 4080			100										
								-								
								-								

Total Class Cover Percent Average for 25-1A,B, and C:

Native 26.5 non-native 16.98 no vegetation 58.56333

Reach: 25												
Transect Number:	1Δ											
Transcer transcer.	1/1			-	Class	Cover			Ground Cov	ver Materia	al	
Reading pe Kullanii 1 2	a occidentalis purputea nor native grass	ontegunuso.	Saire good line it make the sair of the sa	,	rive		No Sport	Bate	Rock/Copple Leaf Litter Coarse mooth		nud kash unggangding	tag.
2			1	-	1						1	
4			1		1				1		1	
5			1 1		1				1			
6			1		1				1			
7							1		1			
8			1		1				1			
9							1		1			
11							1		1			
12							1		1			
13	1				1				1			
14	1		1			1			1			
15 16	1		1 1			1			1		1	
17	1		1		1	1			1		1	
18			1		1				1			
19							1		1			
20							1		1			
21							1		1			
22							1	_	1			
23			1		1			_			1	
24 25			1		1		1				1 1	
26			1		1		1			1		
27					1						1	
28			1		1						1	
29 30					1		1				1	
31			1		1						1	
32					1		1		1		1	
33							1		1			
34							1		1			
35			1		1				1			
36			1		1				1			
37							1		1			
38 39					1		1		1			
40							1		1			
41							1		1		1	
42							1				1	
43							1				1	

Reach: 25						
Transect Number: 1A	,					
Transect Number. 1A			Class Cover		Ground Cover	r Material
			Class Cover			
44	Ringer Barragine Bases Barragine St. Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Bases Barragine Barra	Sally Boolding i mature Scirpus Californica Typha latifolia	Native Norrative Both			edis water mud trash inegoteetinas
45				1	1	
46				1	1	
47				1	1	
48	1	1	1		1	
49				1		1
50				1	1	
51				1		1
52 53				1		1 1
54				1		1
55				1	1	
56				1	1	
57				1	1	
58				1		1
59				1		1
60				1		1
61				1		1
62				1		1
63				1		1
64				1	1	
65		1	1		1	
66		1	1		1	
67		1	1		1	
68		1	1		1	
69				1	1	
70				1	1	
71				1	1	
72	1		1		1	
73	1	1	1		1	
74		1	1		1	
75 76		1	1	1	1	
77				1	1	
78				1	1	
79				1	1	
80				1	1	
81	1		1		1	
82	1		1		1	
83	1		1		1	
84	1		1		1	
85	1	1	1		1	
86					1	

Reach: 25																					
Transect N	umber: 1A																				
		l l							-	Class	Cover				Ground	Cover Ma	terial	L	I.		
Reading pe	Euthamia oci	Jonnoes burbures	. Rative gra	PolyBound	Silvet So.	Sair good train Sir	us californica	a latitolia	_		80th	Modalit	831°	ROCK CODDIE	af litter Coarse 1	water water		mud	tlogi,	ung outed in	(3R)
87							1		_	1					1						
88									-			1							1		
89							1		-	1					1						
90							1		-	1					1						
91 92									-			1			1						
93							1		-	1		1			1						
94							1		-	1					1						
95							-		-	1		1			-				1		
96									-			1							1		
97									-			1							1		
98									-			1							1		
99									_			1			1						
100							1		_	1					1						
101				1					_	1 1					1						
102	1									1					1						
103	1									1					1						1
104	1									1					1						1
105	1									1					1						
106	1								_	1					1						
Totals	5	4	2	7	1	11	9	20		38 9	5	55	0	1	72	0	5	22	6	0	<u> </u>
									_	Total Class Cover:											
									-	Native	40.56604										
									_	non-native	13.20755										
									_	no vegetation	51.88679										
									-												
									-												
									-												

Company Comp				T								1	П	T		
Constraint Con	Reach: 25	_														
Medica or whether the property of the property	Transect Number: 18	В										0 10				
1						_	Class Cover							l		
1	Reading pe 88ctharis 2	Salicifolia August	Chbernzeb.	Leptochloau	Indianis a beholdes the Base of Lournague Help bastago lanceolata bolkeunus as. Thomas a tropias a tropias as the base of the bastago lanceolata base of the base	Mative	Monrative Both	No lish	Bate	Rock(Cobble	Leaf Litter	Coarse mooth	Nater Mater			Intented tiples?
7	1				1									1		
4	2						1							1		
S	3									1						
1	4															
The content of the	5						1				_					
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Reach: 25														
	Number: 1B							-						
							Class Cover				Ground Co	ver Materia	İ	
Reading p	e Bachaitsal	Cotula austr	Chernz sp.	Legrachioaus	Lithingia pedigides Ron. Tative Brast and Pantago lance olata Pollikohim sp	4x5	the Montagine Both Montagin		Bare Rockl Copple	leatlittet	Coarse mooth	, debits	mud	sand ungouted in tash
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Reach: 25																
Transect Nu	umber: 1B	3														
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Reach: 25																									
Transect Number: 1	LB																								_
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Reach: 25							
Transect Number: 1C							
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Reach: 25				
Transect Number: 1C				
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	Class Covel		Ground Cover ividteri	ui
			Leaflitter Coarse moody debris	
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-20.	ative ox	Copple	xer you	×e
nhasi	Mating Mouring Both Motigi	l e zulc	leglitte Coalse, mater	id acres
Reading pe Kyphas9.	Mative Monnative Both Mohant	Bare Rock/Cobble	Sec Co. Mo	mud concrete
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Reach: 25														
Transect No	umher: 1C	_				_								
TIGHSECT IN	uniber. 10		Class	Cover						Ground Cov	l ver Material			
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								ROCK/CORDIE		97	10			
	દ્ધુ.		Wornative		Z,			Coppi	.xxer	NOO			concrete	
	idha	Native 6	onino	BOTH	No blant		are	CKIC	afili	arse	ater	mud	ncle	
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Reach: 25				
Transect Number: 1C				
Transect Number. 10	Class Cover		Ground Cover Materia	1
	Class Cover			<u> </u>
			Leaf Litter Coarse mooth debris	
			Mae	
9:	* ide	abble	et noot	
nask	ine what in dialic	e HCG	s little see see	à ciette
Reading pe	Matine Mountaine Both Mobiant	Bare RockIC	Leaflittet Coase mooth	mud concrete
Reading pe Kyphass. 115 1	1			1
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Reach: 25				
Transect Number: 1C				
	Class Cover		Ground Cover Materi	al
	Class cover		Leaf Litter Coarse Moody debries	
			debri	
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, sb.	a ative ant	Color	itter e mo	, e ^{ve}
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Reach: 25														
Transect No	umher: 1C	_												
Transect IV	umber. IC	_		Class	Cover					Ground Cov	l ver Material			
		_		Class	Cover					Ground Cov	/ei iviateriai			
	έδ.			ative		ă.		RocklCobble	.x ^x e ^x	coate mood	debris		že	
Reading pe	TAPLES		Mative	Monnative	BOTT	Modalit	Bate	ROCKIC	Leafille	coarse	water	mud	concrete	
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			non-native		0									
		_	no vegetati		70.61611									
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Reach: 25				
	ampled during post clearance surveys because the area	had not been cleared		
Transect Name of 27	Class Cover	nad not been eleared.	Ground Cover Materia	.1
	Class Cover		Leaflittet Coatse moody debrits	<u> </u>
			, abris	
		.0.	84 de	mud ungsouted in place
	xive x	ablie	*et moor	*eq.(
	ive grat in plan	e HC	alike age to	d grout
Reading per foot:	Mative Monnative Both Moplant	Bare ROCH CORDIE	led little Codise water	Rud Ingrov
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Reach: 25				
	oled during post clearance surveys because the a	area had not been cleared		
Tanacat Hambert 27	Class Cover	- Canad Not Scent dealed.	Ground Cover Mate	rial
	Class Cover		:c	
			Leaf litter Coarse mooth debris	mud ungfouted in prate
	Native Norrative Both Noblant	Male	Leaflittet Coase mooth a water	abity.
	Native Norvative Both Noblant	a Woot	clitte sen	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Reading per foot:	Magine Mourice Both Mobias	Bare RockIC	restriction Clouder, Marel	riud Inglou
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Reach: 25																		
Transect Number:	: 2A -	not sample	ed during	post clea	ance surve	ys becaus	e the a	rea had no	t been cl	eared.								
				C	lass Cover								Ground C	over Mate	rial			
Reading per foot:			Wative	Moung	line Both	No.	ant		&ate	ROCHICO	oble,	led litter	Coarse wo	water water	mut	•	Jr. grouted ti	it so
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78								-										
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83																		
84																		
85																		
Totals	0			0	0	0	0			0	0	0		0	0	0	C	
				ass Cover:														
			Native	•		0			-									
			non-nat			0			-									
			no vege	tation		0												
			-						-									

Reach: 25														
Transect Number: 2B - n	ot sampled dur	ing post clearar	nce surveys be	ecause the a	rea had not	been cleare	ed.							
			ss Cover						Ground Cov	er Materia				
Reading per foot:	Mativ	se Nornative	e Boxil	Mohlant		metal dide	Rock(Cobble	Lea Litter	Coarse moody	debris	mud	sand	contrate lasohalt	ure outed riprass
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Reach: 25								
	npled during post clearance surveys b	ecause the area had no	t been cleared.					
	Class Cover			Ground Cov	ver Material	<u>'</u>		
				Leaf litter Coarse mooth	is			
					ger.		contrete la solvalit	Uregouted ripras
	e		ne male	or 1000	`		3/350,	ob'il
	ive grati in	diant	* slone * Klon	flitte reen	.e ^t :	8	crete,	route
Reading per foot:	Matine Montatine Both	No riant	metal pipe Rock/Colonie	res. Cos.	water mu	d sand	concret trash	Tug.
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Reach: 25															
Transect Number: 2B	not sampled o	during pos	t clearance	surveys be	cause the a	rea had not	been clear	ed.							
			Class (Ground Cov	er Materia				
		ative	Monnative		Mohant		*310ipe	ROCHICODOILE	Klitter	Coarse moody	debris .	۸	.8.	contrete lasohalt	urefouted riprass
Reading per foot:	4	Ser.	401.	BOTIL	, v		nei	80C.	reg.	Color	wat	mud	sand	concres trash	Jug.
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Reach: 25															
Transect Number: 2B -	not sample	d during p	post clearan	ce surveys be	ecause the a	rea had not	been clear	ed.							
	-			s Cover						Ground Cov	ver Materia				
										Coarse moody	is				
											196 ₀ ,			concrete lasohalt	une outed in practice of the second s
			.ve				.se	ble	ď	,000	•			18501	adillo.
		.ve	nativ	~	olant		" al pil	1/00	e little	,se n		λ	۸	clesco, "	route
Reading per foot:		Mative	Monnative	Both	No Plant		neti	RocklCobble	reg,	Cogr	nater	mud	sand	concret trash	nug,
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Reach: 25															
Transect Number: 2B -	not sample	d during p	oost clearar	nce surveys b	ecause the a	rea had not	been clear	ed.							
				ss Cover						Ground Cov	ver Materia	I			
										Coarse Moodi	ું (%				
											'96 ₀ ,			concrete lashbalk	unerouted riprass
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		,e	nativ		dant		alpip	"ICOL"	litter.	se me	٠.			, e ^{zel}	outer
Reading per foot:		Mative	Non-native	Both	Mobilant		neta	ROCHICODDIE	,eat *	Cost	wate.	mud	sand	concret trash	Ingre
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Reach: 25																		
Transect Nu	mber: 2B -	not sample	d during	post clear	ance survey	s beca	use the a	rea had not	been cle	ared.								
					ass Cover						II.	Ground Co	ver Materia	al				
Reading per	foot:		Mative	Morrati	go Both	7	oplant		metal pipe	Rocklobble	Lea Litter	Coarse mood	ydebrits water	mud	sand	concrete lasahalk		ungfouted riorso
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			Total Cla	ass Cover:														
			Native			0												
			non-nat	ive		0												
			no vege	tation		0												

Reach: 25				
	ed during post clearance surveys because the a	rea had not been cleared.		
Vegetation species	Class Cover		Ground Cover Mater	ial
- одстанитери			Leaf litter Coase mooth debris water	
			debri	
		e	2084	
	ative nt	, cdbb.	ixter and	xe l
	Native Nouvilative Both Nouvilati	Bare Rockile	Leaflittet Coarse moody water	mud concrete
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Reach: 25							
	pled during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
50.22.2.2				Coatse Moody deptis			
				debri			
	.e.	Me		20g4°			
	a ative ant	Copy	itter	NO		exe	
Booding on foot	Mative Monnative Both MoPlant	Bare RockIC	Leaf Litter	coarse water	mud	concrete	
Reading per foot:	4 4 6 6	φ. <i>K</i> .		<i>y</i>	4.	C	
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Reach: 25							1
	pled during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
50.000				Coarse mooth debris			
				deply			
	.0.	Me		ody			
	ant ant	Colit	, it ^{ter}	6.MO		exe	
Dooding you foot.	Native Norrative Both Noblant	Bare RockIC	leaf litter	coarse water	mud	concrete	
Reading per foot:	4 6 8 6	δ. <i>K</i> .		V 1	4.	C	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coatse mooth debris			
				gept.			
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	e native lant	1CODE	littel	e ^{no} ,		,e ^{xe}	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	Coatse water	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coatse mooth depits			
				debr			
	.0,	We	Leaf Litter	20g4			
	e native lant	1CODE	littel	e ^{no} ,		,e ^{xe}	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	Coatse water	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coarse mooth debris			
				debri			
	.0,	We.	Leaf Litter	ody			
	e gatir lant	Copr	, ittel	e ^{no} ,		,e ^{že}	
Reading per foot:	Mative Monnative Both MoPlant	Base Bockile	, est v	coarse water	mud	concrete	
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Reach: 25									
Transect Number: 2C - not sam	pled during post clearance surve	eys because the ar	rea had not been cle	ared.					
Vegetation species	Class Cover					Ground Cover Ma	terial	<u>"</u>	1
Reading per foot:	Wative Wonnative Both	MoRlant	Bate	Rock/Cobble	Leaf Litted	coarse moody debris	mud	concrete	
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Totals 0	0 0	0 0	_	0 0	0	0	0	0 0	
	Total Class Cover:		_						
	Native	0							
	non-native	0							
	no vegetation	0							

Reach: 25							
	led during post clearance surveys because the a	area had not been cleared					
Vegetation species	Class Cover	see nee nee seen elearea.	G	round Cover Material	<u> </u> 		
vegetation spe	Class cover			Coarse mooty debris			
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		e		0840		, ilpro	
	a ative ant	Colit	itter	NO		wed	
Donding you foot.	Matine Montatine Both Montant	Bare RockIC	Leaf Litter (coatse water	mud	. restor	
Reading per foot:	4 4 4	A. K.	,		4.	3	
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Reach: 25														
Transect Number	: 3A - not samp	led during I	post clearan	ce survey	s because the	area had	not been cle	ared.						
Vegetatio	n species		Clas	s Cover						Ground Co	over Materia	al		
Reading per foot:		Wative	Nornative	, Both	No Plant		Bate	RocklCopp	e Leaflitter	Coate Moc	ay debris	mud	unefouted rif	1206
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		non-nativ	/e		0									
		no vegeta			0									
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Reach: 25											
Transect Number: 3B - n	not sampled during	nost clearance surveys	hecause the ar	ea had not	heen cleared						
Transcet Namber. 30 - 1	not sumpled during	Class Cover	Security the al	ca naa not	Secii dicarca.				1		
	_	Class Cover									
Reading per foot:	Mative	Nonnative Both	Motisti		ROCH COODIE LESS LITTES	Coarse mooth	Adebris'	mud	sand	ungoutedin	180
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Reach: 25											
Transect Number: 3B -	not sampled during	nost clearance surveys	s hecause the a	rea had not	heen cleared						
Transcet Namber. 3D	not sampled during	Class Cover	S Security tile o	ca naa not	Sectificated.						
	_	Class Cover		-							
						Coarse mod	bis				•
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Reading per foot:	Maline	Nornative Both	Mobilant		ROCH Cololle Lest littes	Cos	nge	mud	sand	TUR	
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Reach: 25								
	pled during post clearance surveys	hecause the area had no	nt heen cleared					
Transect Italiaci. 35 not sain	Class Cover	secondse the area had he	or seem cicureu.					
	Class cover							
	Q.		We.	Coatse mood	Adebris		ungoutedrik	is _o
Reading per foot:	Native Norrative Both	NO Plant	Rock Cobble Leaf Littlet	Coarse no	nated mud	sand	ungrouted	
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Reach: 25								
	pled during post clearance surveys l	hecause the area had n	ot heen cleared					
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	Class Cover							
				Coarse mood	lepris			0
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	ative	*	colonia rel	NOON			xed\	
	Matine Monroatin Both	Plat.	ROCH CORDIE LESS LITTES	aise	water mud	sand	grout	
Reading per foot:	Mative Monrative Both	HOPlant	60, 16°,	Cos	Mo Win	501	ungouted rif	
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Reach: 25				
Transect Number: 3B - not	sampled during post clearance surveys becaus	e the area had not been cleared.		
	Class Cover			
Reading per foot:	Mative Monnative Both Mo	Rodl/Colone Leafuiter	Coarse mooth debris	sand unerouted in ran
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Totals	0 0 0	0 0 0	0 0 0	0 0
	Total Class Cover:			
	Native 0			
	non-native 0			
	no vegetation 0			

Reach: 25					
	ed during post clearance surveys because the a	rea had not been cleared.			
Vegetation species	Class Cover		Ground Cove	r Material	
			Leaf Litter Coarse moody de	:5	
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	Native Norrative Both Norlant	Bare Rockile	Leaflittet Coarse mooth	water mud	concrete
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Reach: 25							
	pled during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	al		
				coarse mooth debris			
				depli			
		l we		0840			
	a ative art	Coppe	ixter	2 NOS		axe	
a	Native Norrative Both Noblant	8are Rockill	leat litter	coarse water	mud	concrete	
Reading per foot:	4, 4, 8, 4,	\$c	\ v	C n	4.	0	
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Reach: 25 Transect Number: 3C - Not sampled during post clearance surveys because the area had not been cleared. Vegetation species Class Cover Ground Cover Reading per foot: Rea	r Material pois		
Vagatation species Class Cover	r Material		
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Reading per foot: Wastive Work Both Work Both Roots Bare Rock Leaf Lit Coarse	igt all	concrete	
Reading per foot: 48 40 40 40 40 40 40 40 40 40 40 40 40 40	<u>r</u> 6.	C	
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Reach: 25							$\overline{}$
	ed during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	l		-
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	J	^{sole} .	Leaf Litter	ody			
	ne nativ	, log	litter	se ne		,e ^{že}	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	eat	Coolise water	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia			
<u> </u>				Coase Moot debris			
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	e native hank	1CODE	\it ^{tel}	ce wo		,e ^{xe}	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	Coatse nater	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
3,000				Coarse mooth debris			
				debri			
	.0.	We.		20g4°			
	a catifue ant	Copr	, ittel	eno,		,e ^{xe}	
Reading per foot:	Mative Monnative Both Moplant	Base Bockile	Leaf Litter	coarse water	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coatse mooth debris			
				debr			
	.0,	We	Leaf Litter	20gy			
	e gative gant	1CODE	littel	e ^{no} ,		æe	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	Coatse water	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coarse mooth debris			
				gept.			
	.0,	We	Leaf Litter	ody			
	ant satisfie	Capr	, ittel	eno,		,e ^{xe}	
Reading per feet:	Mative Monnative Both MoPlant	Bare RockIC	, eat .	coarse water	mud	concrete	
Reading per foot: 267	6 6 0 6	8 4	<u> </u>	0 %	()	G	
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Reach: 25							
	pled during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover		1	Ground Cover Materia	1		
				Coarse mooth debris			
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	.0,	We	Leaf Litter	20gh			
	a sative sant	, Capt	, ittel	eno,		,e ^{xe}	
Reading per feet:	Mative Monnative Both Moplant	Bare RockIC	eat	coatse water	mud	concrete	
Reading per foot:	6 6 0 6	A K		0 4	4.	C	
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Reach: 25								
Transect Number: 3C - not sample	d during po	st clearance surveys be	cause the a	rea had not been clea	red.			
Vegetation species		Class Cover				Ground Cover Materia	al	
Reading per foot:	Kajiye	Nonnative Both	Mobilant	Bate	Rock/Cobble	Leaf Litter Coarse mooth depris	mud	concrete
Totals 0	0		0		0 0		0	0
	Total Class	Cover:						
	Native	0						
	non-native	0						
	no vegetati	on 0						

Transect Number: 4A - not sampled during post clearance surveys because the area had not been cleared. Vegetation species Class Cover Class Cover Reading per foot: 1	Reach: 25							
Vegetation species Class Cover Ground Cover Material		led during post clearance surveys because the a	rea had not been cleared.					
Reading per foot: ### ### ############################				Gro	ound Cover Material			
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Reach: 25			1											
THANSELL MUMBER	: 4A - not sampl	ed during	nost clearar	nce survevs	because the a	_ area had no	t been clea	red						
Vegetation		ea aariiig		ss Cover	Security (176)		- Sections			Ground Co	over Materia	al		
regetation	species		0.0.			-				Coarse not	:6			
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		Mative	Non-native	BOTH	Mobiant		Bare	CAYLO	Leaf Litter	agise	water	mud	Stor	
Reading per foot:		40	40	80	40		80	80	\\$	C	7/2	W.	n.	
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Totals	0		0	0	0 0			0 0	0		0 () (0	

Reach: 25										
Transect Number: 4A - not sampl	ed during post clearance surveys	because the a	rea had not been cl	eared.						
Vegetation species	Class Cover					Ground Cov		l		
Reading per foot:	Native Norrative Both	Modaux	Bate	RockyCobble	Leaflither	Coarse wood	uater unated	Rud	ungfouted riof	⁽² 6)
	Total Class Cover:									
	Native	0								
	non-native	0								
	no vegetation	0								

Reach: 25										
	- not sampled during	post clearance surveys b	ecause the a	rea had not	been cleared.					
		Class Cover		_		Grou	ind Cover M	aterial		
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		.,e			62	e d	24			dil.
	.,e	nativ	dant		, Cob	litte. seme	ď			outer
Reading per foot:	Malive	Nornative Both	No blant		sare Rockill	e Leaflittet Coarse moo	wate	mud	sand	Ing Outed ripras
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Reach: 25												
	ber: 4B - not samp	led during p	ost clearance surveys	because the a	_ area had not	been cleared.						
			Class Cover					Groun	d Cover M	aterial		
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							ble Leaflitter	064				ureguited intrap
			Wornstive Both	NO Blank		ري, ا	itter .	° NO.				užeo
		Mative	Mouring Both	100/10		sare social	ast V	adist	, a ^{tel}	mud	sand	dio
Reading per fo	oot:	40	40 80	42		80 60	Ye .	C	4,	4,	50	N.
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Reach: 25																		
	umber: 4B -	not sample	d during po	st clearance	surveys be	cause the a	rea had no	t been clea	ared.									
				Class	Cover							Groun	nd Cover M	aterial	<u>, , , , , , , , , , , , , , , , , , , </u>	,		
Reading pe	er foot:		Native	Morrative	BOHN	MO Plant		Bate	ROY	jok leaflitik	ž	Coarse moody	dedis uster	mud	sand		ungforted fi	gian
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72																		
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Totals	0		0	0	0	0			0	0	0	0	0		0	0	C)
			Total Class	Cover:				<u> </u>										
			Native		0													
			non-native		0													
			no vegetati	ion	0													

Reach: 25							
	led during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover	35555555		Ground Cover Materia	<u> </u>		
				Coatse mody debris			
				depri			
		we.		-od4°			
	a stive ont	Copy	itler	e Moe		xe	
	Native Notinative Both Notinit	Bare Rockile	Leaf Litter	coarse water	mud	concrete	
Reading per foot:	4 8 4	& Ke	V	<u> </u>	4,	C	
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Reach: 25							
	ed during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
				coarse mooth debris			
				debri			
	.0.	Me		20g4°			
	ant sative	, Colife	, ittel	eno,		,e ^{xe}	
Reading per feet:	Mative Monnative Both Modant	Bare RockIC	leat litter	coarse water	mud	concrete	
Reading per foot: 39	6 6 0 6	♦ ₹	<u> </u>	0 %	(4)	C	
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Reach: 25							
	oled during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
1000000				Coarse mooth debris			
				deply			
	.0.	Me		ody			
	a sative ant	Color	itter	, NO		exe	
Deading you foot	Native Norvative Both No Plant	Bare RockIC	Leaf Litter	coarse water	mud	concrete	
Reading per foot:	4 8 4	8. 4.	<u> </u>	C 1	4.	C	
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Reach: 25							
	led during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
				Coarse mooth debris			
				deply			
	.e.	Me		ody			
	ant said	Capr	, itter	, e MO		exe	
Dooding you foot.	Matine Monnatine Both Modant	Bare RockIC	Leaf Litter	coatse water	mud	concrete	
Reading per foot:	6 6 6	8 4	<u> </u>	V 1	4.	C	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover		1	Ground Cover Materia	1		
<u> </u>				Coatse mooth depits			
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	e native lant	1CODE	littel	e ^{no} ,		æže	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	coatse" water	mud	concrete	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coatse mooth debris			
				debr			
	.0,	We	Leaf Litter	20gy			
	e native lant	1CODE	littel	e ^{no} ,		,e ^{xe}	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	Coatse water	mud	concrete	
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Reach: 25							
	pled during post clearance surveys because the a	rea had not been cleared.					
Vegetation species	Class Cover		1	Ground Cover Materia	1		
<u> </u>				Coarse mooth debris			
				debt.			
	.0,	We	Leaf Litter	20gh			
	a sative lant	, Colife	, ittel	eno,		,e ^{če}	
Reading perfect:	Mative Monnative Both Moplant	Bare RockIC	eat	coatse water	mud	concrete	
Reading per foot:	6 6 0 6	A. K.		0 4	4.	C	
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Reach: 25							
	ed during post clearance surveys because the a	area had not been cleared.					
Vegetation species	Class Cover			Ground Cover Materia	1		
<u> </u>				Coarse mooth debris			
				gept.			
	.0,	We We	Leaf Litter	ody			
	e satir lant	Cope	, ittel	e ^{no} ,		,e ^{že}	
Reading per foot:	Mative Monnative Both Moplant	Bare RockIC	, est v	coarse water	mud	concrete	
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Reading per foot: Reading per foot: 305 306 307 308 309 310 311 312 313 314	
Reading per foot: Reading per foot: 305 306 307 308 309 310 311 312 313	
Reading per foot: Native	
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Reach: 25									
	npled during post clearance surve	vs because the a	area had not been cle	ared.					
Vegetation species	Class Cover	,				Ground Cover Materi	al		
<u> </u>						Coarse Moody debris			
						debri			
	.0.			Z/e		ody			
	a sative	ant		Cope	, itter	e no		.e ^{xe}	
Donding you foot	Matine Monnative Both	Noblant	Bare	Rock/Cobble	eat	Coatse water	mud	concrete	
Reading per foot:	4 4 8	4	8	- K	<u> </u>	<i>y</i>	4.	C	
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Totals 0	0 0	0 0		0 0	0	0	0 0	0	
	Total Class Cavarr								
	Total Class Cover:	0							
	Native	0							
	non-native	0							

Reach: 25											
Transect Number: 4C - not samp	led during pos	t clearance	surveys be	cause the a	rea had not	been cleare	ed.				
Vegetation species		Class	Cover					Ground (Cover Mater	ial	
Reading per foot:	tive ornative at		₽ oth	Modalit		Bate	ROCH/Cobble Leafith	tei Course ma	nater vater	mud	concrete
	no vegetatio	on	0								
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Reach: 96															
Transect Number: 1						_	Class	Carran				Constant Contract Materia	-1		
							Class	Cover				Ground Cover Materi	aı		
Reading pe Aurida dor?	st Bachaitsalikolia	niek ^o Cardurs pri	nocephalis A	Cheurzy, Weildirzzb. Vouvegine Bazz	ursinus Vinco sp.	Wajive	Konnaine 1	BOHL	*Po Sporg	886	ROLLICOPPE RESTITES	Classe mooth destris	rud	şənd	
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51										1	1				1					1				
52										1	1	<u>-</u>			1	_				1				
53										1	1	<u>=</u>			1	_				1				
54										1	1	-			1	_				1				
55										1	1	<u>=</u>			1	_				1				
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												_	Total Class	Cover:	70.90909									
												_	non-native		54.54545									
												_	no vegetat		12.72727									
												-												
												-												

Reach: 96									_					
Transect Number: 2														
						Class	Cover			1	Ground Co	over Materia		
Reading pe & assica night	a Carduis pychocephalus pornative	Andre Andrews Heith	s Salik asidledis	_	Native	Nonrative	Both Mobis	× 1	Byle	RocklCobble	Leaf Litter Coatse moc	nater nater	mud	grothed riprate sand
2 3 4 5 6								1 1 1 1 1						1 1 1 1 1
7 8				-				1	-		1 1			
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10 1						1					1			
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19		1				1					1			
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36	1				1									1
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Reach: 96																	
Transect Number: 2																	
			"				Class C	Cover			II.	1	Ground	Cover Mat	erial	JI.	
Reading pe & Sassica high?	Cardius pychoceafralus	P. non-native grasses	us ursinus Salix li	siolegis Tu	bys.	Mative No	n.rative	40xx	MO Plant	8ste	ROCHLOODIR	leaf litter	Costser	oody debris	mud	eto,	uted in praft sand
42					1	1									1		
43									1						1		
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46				1		1							1				
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Totals 4	1	7 12	1	2	1	9	11	2	33		0 3	2	:6	0	9	2	11 4
						Total Class Cov	er:										
						Native		20									
						non-native		23.63636									
						no vegetation		60									

Reach: 99															
Transect Numb	her: 1														
		ioc		Class	Cover		_				Ground Cov	or Mata	rial		
vegeta	ation spec	ies		Class	Cover		-				Ground Cov	rer iviate	[[d]		
			Mative	Nonrative	7/2	No plant		,e	ROCHICODILE	aflitter	Coatse mooth	debris	sand	andete	mud
Reading per fo	oot:		40	40.	BOTT	40		Bare	40	Sec.	Cor	40	Sal	%	KUL
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2						1				1					
3						1				1					
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6						1	-								1
7						1	-								1
8						1				1					
9						1				1					
10						1				1					
Totals	0		0	0	0	10		0	0	7	0		0 0		0 3
							_								
			Total Class	Cover:			-								
			Native		0		_								
			non-native		0										
			no vegetat	ion	100										
		_	_	_	_	_	_			_					_

Reach: 99															
Transect N	umber: 2														
		Veg	getation species	ı		Class	Cover				Grour	nd Cover Mat	erial	1	
Reading pe	Arundo donat non native el	ass Rolipps lasti	Rumet maritimus	Southus Sp.	Uritea urens	Native Monnative	₩ OLÍT	NO Plant	&ate	ROCK/CODDIE	atliter	Coarse Moody	nater .	mud	1
2					1	1									1
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15			1			1					1				
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17	1					1									1
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19	1					1					1				
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Totals	5 5	2	4 3	2	1	0 15	0	5	0	0	6	0		1 1	3
						Total Class Cover:									
						Native	0								
						non-native	75								
						no vegetation	25								
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Reach: 99									
Transect Number: 3									
	Class Cover					Ground Cover Materi	al		
Reading pe Rofippa nasturtium aduaticum	ine.	×		oblie		Coarse moody deoris		Q.	
Reading pe Reading pe	Native Normative Both	No Plant	Bare	ROCHCODDIE	Leaflith	coarse water	mud	concrete	
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		1			1				
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5		1			1				
6		1					1		
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8		1			1				
9		1					1		
10		1			1				
Totals 1	0 1	0 9		0 1	6	0	1 2	0	
	Total Class Cover:								
	Native	0							
	non-native	10							
	no vegetation	90							

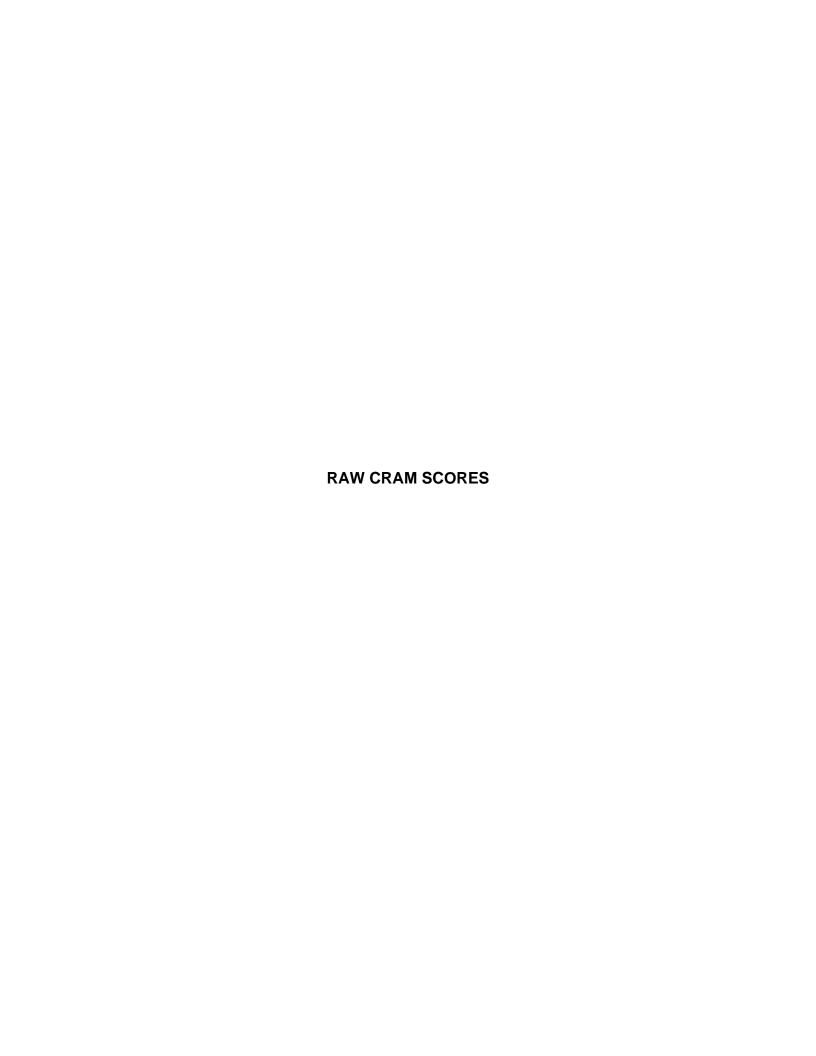
Reach: 100		
Transect Number: 1		
Transcot Italiaeti 1	Class Cover	Ground Cover Material
		36
		Bare Rock/Coloble Leaf-Litter Coarse mooth debris roud concrete
411.	.e.	Bare Rock Copple restricted Coarse moody of United Concrete
ighe.	e sative ant	Copp inter como
Panding no Aede'	Native Morrative Both Moriant	Bare Rock/Copple restricted Coasse moody uster with concrete
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	_			Class Co	ver		_						Cover Mat			-		
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Totals 4			0	4	C) :	36		0	4	27		0	9		0	()
	T	otal Cla	ass Cover	:			_											
	N	ative			C)												
	n	on-nat	ive		10)												
	_		tation		90													
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	_																	
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	_						-											

Reach:																
Transect Number:																
Transect Number.	Ve	getation spe	acias				Class	Cover					Ground Co	ver Materia		
	VC	getation spe	ccics				Class	COVCI					Ground Co	ver iviateria		
				Powednings. Boubla lastin	, ici	<i>.</i>										
	W ^S				adliat											
	aphar		iis		Minio									bis		
	prenoce's the dia incar	os Minulus card	dinalis dinative et	Poheonin sp. Rolidis ustra	Kill						.0.		Coarse mooth	400		
	pyli aldia isal	's can	*ing &	, July Jugge			Monnative		×		ROCHCOBBE	leaf litter	MOOR			.e.
duly	schie aliotic	Miller	2.nat	Medi, ilbbs		sive	n'hat.	*//	Platte	.0	4/0	alite	arse t	xe ⁽	6.	ater
Reading pe	Hill We.	Will	VOI.	60, 60,		Wative	40,	BOTH	NO Plant	Bare	800	reso.	Coo	nater	mud	concrete
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Danah.								
Reach:								
Transect Number:								
	Vegetation species			Cla	ss Cover			Ground Cover Material
Reading pe Cardius Pi	krocedralus krocedralus krischfedia incara Nellotus alba Nimulus cardinalis non-native grass	P. Rolippa nasturti	um aduaticum	Mative Monrativ	e ROM	40 Plant	Bare Rock/Colobe	Leaf Litter Coarse moody debris nud concrete
40								
41								
42								
43								
44								
45								
Totals	0 0 0 0	0		0	0 0	0	0 (0 0 0 0 0
				Total Class Cover:				
				Native	0			
				non-native	0			
				no vegetation	0			





	Site Number (SBC Reach No.)		39	40								41	42	43a	43b	
	Assessment Area No.		39-1	40-1	40-2	40-3	40a-avg	40-4	40-5	40-6	40b-avg	41-1	42-1	43-1	43-2	43-avg
	Wetland Class		riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine	riverine
	Wetland Subclass (confined o	r non-confined	non-conf	confined	confined	confined		non-conf	non-conf	non-conf		non-conf	confined	confined	confined	
Attibute	Metric															
Buffer	Aquatic Area Abundance		3	3	9	12	8.0	12	12	12	12.0	12	3	3	12	7.5
and	Buffer Condition (BC)	_														
Landscape	BC: % of AA with Buffer	-	12	3	12	12	9.0	12	12	12	12.0	12	3	12	12	12
Context	BC: Average Buffer Width	_	9	3	3	3	3.0	3	3	3	3.0	3	3	6	3	4.5
	BC: Buffer Condition		6	6	6	6	6.0	6	6	6	6.0	3	3	6	9	7.5
		Final Attribute Score	45.40	30.18	62.50	75.00	56.60	75.00	75.00	75.00	75.00	67.68	25.00	42.23	80.62	62.18
Hydrology	Water Source	_	6	6	6	6	6.0	6	6	6	6.0	6	6	6	6	6
	Channel Stability		3	3	9	9	7.0	9	9		9.0	9	3	12	12	12
	Hydrologic Connectivity		3	6	12	12	10.0	12	3	12	9.0	3	3	9	12	10.5
		Final Attribute Score	33.33	41.67	75.00	75.00	63.89	75.00	50.00	75.00	66.67	50.00	33.33	75.00	83.33	79.17
Physical	Structural Patch Richness	_	3	6	6	6	6.0	3	3	3	3.0	3	3	3	3	3
Structure	Topographic Complexity		3	6	6	6	6.0	6	6	9	7.0	9	3	6	6	6
		Final Attribute Score	25.00	50.00	50.00	50.00	50.00	37.50	37.50	50.00	41.67	50.00	25.00	37.50	37.50	37.50
Biotic	Plant Community (PC)	_	9.00	5.00	6.00	8.00	6.3	7.00	10.00	8.00	8.3	10.00	7.00	8.00	9.00	8.50
Structure	PC: No. of plant layers		12	6	9	9	8.0	9	12	9	10.0	12	6	9	12	10.5
	PC: No. of co-dominants	_	6	3	3	6	4.0	3	6		5.0	6		6	6	6
	PC: Percent Invasion	<u>-</u>	9	6	6	9	7.0	9	12		10.0	12	12	9	9	9
	Interspersion	<u>-</u>	6	3	6	6	5.0	6	9		8.0	3	3	6	3	4.5
	Vertical Biotic Structure	-	3	6	3	3	4.0	3	6	9	6.0	6	3	9	3	6
		Final Attribute Score	50.00	38.89	41.67	47.22	42.59	44.44	69.44	72.22	62.04	52.78	36.11	63.89	41.67	52.78
	Overall AA Score		38.4	40.2	57.3	61.8	53.3	58.0	58.0	68.1	61.3	55.1	29.9	54.7	60.8	57.9

	Site Number (SBC Reach No.)		44					98
	Assessment Area No.		44-1	44-2	44-3	44-4	44-avg	98-1
	Wetland Class		riverine	riverine	riverine	riverine	riverine	riverine
	Wetland Subclass (confined o	r non-confined	confined	confined	confined	confined		confined
Attibute	Metric							
Buffer	Aquatic Area Abundance		12	12	12	9	11.25	3
and	Buffer Condition (BC)	-						
Landscape	BC: % of AA with Buffer	-	12	12	12	12	12	6
Context	BC: Average Buffer Width	-	3	3	3	3	3	3
	BC: Buffer Condition	•	9	6	6	6	6.75	3
		Final Attribute Score	80.62	75.00	75.00	62.50	73.39	27.37
Hydrology	Water Source		6	6	6	6	6	6
	Channel Stability		12	9	9	9	9.75	12
	Hydrologic Connectivity		12	9	12	6	9.75	3
		Final Attribute Score	83.33	66.67	75.00	58.33	70.83	58.33
Physical	Structural Patch Richness	_	3	3	3	3	3	3
Structure	Topographic Complexity	_	6	6	6	6	6	6
		Final Attribute Score	37.50	37.50	37.50	37.50	37.50	37.50
Biotic	Plant Community (PC)	_	10.00	8.00	8.00	10.00	9.00	8.00
Structure	PC: No. of plant layers	<u>-</u>	12	9	9	12	10.5	9
	PC: No. of co-dominants	_	6	3	6	6	5.25	6
	PC: Percent Invasion	-	12	12	9	12	11.25	9
	Interspersion	-	6	3	3	3	3.75	3
	Vertical Biotic Structure	-	6	3	3	3	3.75	9
		Final Attribute Score	61.11	38.89	38.89	44.44	45.83	55.56
	Overall AA Score		65.6	54.5	56.6	50.7	56.9	44.7





Biological Technical Assessment

San Gabriel River Watershed Feasibility Study

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TABLE OF CONTENTS

<u>Secti</u>	<u>ion</u>			<u>Page</u>
1.0	Intro	duction		1
2.0	Liter	ature Re	eview	2
3.0	Biolo	ogical Su	urveys	3
	3.1	Veget	ation Mapping Surveys	3
		3.1.1 3.1.2 3.1.3 3.1.4 3.1.5	,	8 12
4.0	Vege	tation T	ransects	20
	4.1	Pre- a	nd Post-clearing Vegetation Transects	21
5.0	Calif	ornia Ra	apid Assessment Method Analysis	24
	5.1	Metho	ods/Introduction	24
	5.2	Result	ts	26
		5.2.1 5.2.2	Buffer and Landscape Context Attribute Hydrology Attribute	
		5.2.3	Physical Structure Attribute	
		<i>5.2.4</i>	Biotic Structure Attribute	
		5.2.5	Stressors	29
6.0	Reco	mmend	ations	30
7.0	Refe	rences		33

TABLES

<u>Table</u>		<u>Page</u>
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Biological Technical Assessment Report Nine Soft-Bottom Channel Reaches Vegetation Types Focused Plant Survey Dates and Personnel Focused Survey Results Summary For Wildlife Results of Summer Season Bird Surveys Summer Bird Diversity and Abundance at the Nine Soft-Bottom Channel Reaches (Ranked High to Low for Bird Density) Migratory Bird Surveys Vegetation Analysis Transects Total Vegetated and Unvegetated Percent Cover Description of CRAM Attributes and Metrics California Rapid Assessment Method Functional Ratings Summary of California Rapid Assessment Method Results Summary of Stressors Associated With Each Reach Summary of Biological Values Biological Value Scores Ranked High to Low	41517212426272930
	EXHIBITS	
<u>Exhibi</u>	<u>Follows</u>	<u>Page</u>
1a 1b 1c 1d 1e 1f	Recommendations – Reach 41 (Walnut Creek)	34 34 34
	APPENDICES	
<u>Appen</u>	<u>ndix</u>	
A B C D E F	Soft-Bottom Channel Maps of Vegetation Types Results of Focused Plant Survey Report Results of Fish Survey Report Results of Southwestern Willow Flycatcher and Least Bell's Vireo Report Data Workbooks of Vegetation Transects Raw CRAM Scores	

1.0 INTRODUCTION

This Biological Technical Assessment Report (Report) has been prepared to satisfy requirements of Waste Discharge Requirement Order No. R4-2010-0021 (WDR) adopted by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, on February 4, 2010, for the Soft-Bottom Flood Control Channels Project maintained by the Los Angeles County Flood Control District (LACFCD). The WDR requires that a Feasibility Study be conducted for all watersheds containing soft-bottom channel (SBC) reaches that are maintained by the LACFCD. As required by the WDR, the first Feasibility Study was conducted for the 24 SBC reaches in the Los Angeles River Watershed. The San Gabriel Watershed was selected for the second Feasibility Study. The nine SBC reaches in the San Gabriel River Watershed are listed and described below in Table 1.

As stated in the WDR (Condition 45), the purpose of the Feasibility Study is to provide an "ongoing assessment of channel conditions and hydraulic capacity" in order to "determine where a potential may exist for native vegetation to remain within the soft-bottom portion of the channel or if additional hydraulic capacity is needed". As required by the WDR (Condition 48), a Work Plan was prepared and submitted (dated June 2013) to the RWQCB that provided proposed study methods for the Feasibility Study, including an "assessment of biological functions and values of these reaches" so that "comparisons of habitat type, maturity and extent of native or invasive plants can be made between reaches". The WDR (Condition 50) requires that the LACFCD "include an assessment of the biological function and values for each reach".

This Report assesses the biological function and values for each SBC reach, as required by the WDR (Condition 50). The results of this assessment are incorporated into the final recommendations identifying which SBC reaches can sustain additional vegetation and/or replacement of non-native with native vegetation, without affecting the reaches' hydraulic capacity.

TABLE 1
BIOLOGICAL TECHNICAL ASSESSMENT REPORT
NINE SOFT-BOTTOM CHANNEL REACHES

		Reach Limits					
Reach No.	Reach Name	Upstream	Downstream	Length (ft)	Area (acres)		
39	Beatty Channel Outlet @SGR 25+99.00	Mouth of Beatty Channel Outlet	Confluence San Gabriel River	390	0.26		
40a	San Gabriel River – Santa Fe Dam to I-10 Freeway	Santa Fe Dam	I-10 Freeway	20,996	161.76		
40b	San Gabriel River – I-10 Freeway to Thienes Ave	I-10 Freeway	Thienes Ave	12,374	127.10		
41	Walnut Creek	N Baldwin Park Blvd	San Gabriel River	5,438	40.90		
42	San Jose Creek d/s 1,000 ft from end of concrete	COE Station 87+25.00	COE Station 79+25.00	800	2.73		
43a	San Gabriel River – Upper	Whittier Narrows Dam	San Gabriel River Parkway	3,586	52.83		
43b	San Gabriel River – Lower	San Gabriel River Parkway	Beverly Blvd	3,068	22.07		

TABLE 1 BIOLOGICAL TECHNICAL ASSESSMENT REPORT NINE SOFT-BOTTOM CHANNEL REACHES

		Reach L	Reach Limits					
Reach No.	Reach Name	Upstream	Downstream	Length (ft)	Area (acres)			
44	San Gabriel River – Rubber Dams	Beverly Blvd	Firestone Blvd	31,900	149.00			
98	Walnut Creek – Channel Inlet, SD1	30 ft upstream of perpendicular extension of Chaparro Rd	Perpendicular extension of Chaparro Rd	80	0.14			

ft: feet; I: Interstate; d/s: downstream; COE: U.S. Army Corps of Engineers

Source: LACFCD as provided in WDR Order No. R4-2010-0021 some lengths may be different due to recent corrections.

2.0 LITERATURE REVIEW

A literature review was conducted to review and update existing information gathered through the SBC maintenance program about plant and wildlife species that (1) have been afforded special status by federal, State, and local resource agencies and organizations and (2) have potential to occur in the San Gabriel River Watershed.

Sources reviewed include the following: (1) special status species lists from the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service (USFWS), and the California Native Plant Society (CNPS); (2) the U.S. Geological Survey's (USGS') Azusa, El Monte, Baldwin Park, San Dimas, and Whittier 7.5-minute quadrangles in the CDFW's California Natural Diversity Database (CNDDB) (CDFW 2011) and the CNPS' Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2011); (3) the most recent Federal Register listing package and critical habitat determination for each federally listed Endangered or Threatened species potentially occurring in the San Gabriel River Watershed; (4) the CDFW Annual Report on the status of California's listed Threatened and Endangered plants and wildlife; and (5) other biological studies conducted in the San Gabriel River Watershed that were relevant to this Report, including those conducted previously by BonTerra Psomas for the LACFCD.

The information gathered during the literature search, including a CNDDB database search, was used by the biologists to develop appropriate survey methods.

3.0 BIOLOGICAL SURVEYS

Biological surveys for plant and wildlife species were performed at each of the SBC reaches (see Table 1). The survey area for each reach included habitats within the channel and on the adjacent channel banks. Most of the surveys were conducted in the spring and summer seasons prior to LACFCD's annual maintenance activities, which are performed during the fall. The surveys at each of these nine SBC reaches included mapping of vegetation types; focused searches for special status species including Threatened and Endangered plant and wildlife species; and summer season bird surveys. In addition, migratory bird surveys were conducted at Reach 43 (San Gabriel River – Upper). The methods used to complete these surveys are described below.

3.1 VEGETATION MAPPING SURVEYS

Fourteen vegetation types and five other areas were identified during the vegetation mapping surveys of the SBC reaches described in this Report (Table 2). Mapping of the vegetation types was accomplished concurrent with the summer season bird surveys and the final focused plant surveys conducted in 2010 for each of these SBC reaches. Recent aerial photographs at a scale of 1 inch = 500 feet were used to map vegetation types. Nomenclature for the vegetation types identified in these surveys generally follows the List of Vegetation Alliances and Associations, Vegetation Classification and Mapping Program (CDFW 2010b). The vegetation types identified in the surveys generally reflect the vegetation shown on the aerial maps along the alignment of each SBC reach. For most SBC reaches, the mapped vegetation represents the actual vegetation growing in the channel invert. For smaller SBC reaches, however, the mapped vegetation often consists of the canopies covering the channel invert from trees either rooted outside or on the channel banks. Walnut Creek - Channel Inlet, SD1 (Reach 98) is the only SBC reach in the San Gabriel River Watershed where the tree canopy covers the channel invert. The channel invert of Reach 98 is primarily water, but is partly covered by the canopy of southern coast live oak riparian forest on the south bank and mixed willow riparian forest on the north bank. The vegetation maps for each SBC reach are included in Appendix A.

TABLE 2 VEGETATION TYPES

Vegetation Type	Reach Numbers
coastal sage scrub	39
alluvial sage scrub	39
disturbed alluvial sage scrub	40a
non-native grassland	43a, 43b
Ruderal	39, 40a, 40b, 41, 42,43a, 43b, 44
ruderal/open water	40b, 41
ruderal marsh	44
freshwater marsh	40a, 40b, 43b, 44
mixed willow riparian scrub	40a, 40b, 41, 42, 43b, 44
mixed willow riparian forest	40b, 43a, 43b, 44, 98
mule fat scrub	39, 40a, 40b, 43a, 43b, 44
coast live oak woodland	98
Ornamental	40a, 44
Non-Vegetation Type	Reach Numbers
unvegetated wash	40a, 40b, 41, 43b, 44
open water	39, 40a, 40b, 41, 42, 43a, 43b, 44, 98
Disturbed	43a
ungrouted riprap	40a, 40b
Developed	39, 40a, 40b, 41, 42, 43a, 43b, 44

3.1.1 Descriptions of Vegetation Types

Coastal sage scrub is present in Reach 39. This native vegetation type is dominated by California sagebrush (*Artemisia californica*) with desert brittlebush (*Encelia farinosa*), coastal prickly-pear (*Opuntia littoralis*), scale broom (*Lepidospartum squamatum*), and laurel sumac (*Malosma laurina*). The understory is relatively open and dominated by small native annual forbs including coastal deerweed (*Acmispon glaber*), popcorn flower (*Cryptantha* spp.), and non-native grasses.

Alluvial sage scrub is present in Reach 39. This native vegetation type is dominated by scale broom, with California sagebrush, desert brittlebush, and coastal goldenbush (*Isocoma menziesii*) occurring throughout. Western sunflower (*Helianthus annuus*), telegraph weed (*Heterotheca grandiflora*), strigose lotus (*Acmispon strigosus*), and common plantain (*Plantago major*) are present in the understory.

Disturbed alluvial sage scrub is present in Reach 40a. This native vegetation type is in the vicinity of the alluvial sage scrub described above. The overstory of this vegetation type is dominated by scale broom, with California sagebrush, desert brittlebush, and coastal goldenbush. The shrub cover is much less dense in these areas due to disturbance. The understory is dominated by non-native forbs, including common plantain, weedy cudweed (*Pseudognaphalium luteoalbum*), as well as crimson fountain grass (*Pennisetum setaceum*) and wild oat (*Avena* sp). Non-native common oleander (*Nerium oleander*) is also present in this vegetation area.

Non-native grassland is present in Reaches 43a and 43b. This vegetation type is composed of non-native grass species including rattail fescue (*Festuca myuros*), ripgut grass (*Bromus diandrus*), hare barley (*Hordeum murinum* var. *Ieporinum*), and perennial ryegrass (*Festuca perennis*). Additional non-native forbs are present throughout including tocalote (*Centaurea*)

melitensis), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), and white sweetclover (*Melilotus alba*). A small number of scattered Goodding's black willows (*Salix gooddingii*) were also present.

Ruderal (weedy) areas are present in Reaches 39, 40a, 40b, 41, 42, 43a, 43b, and 44. This vegetation type consists of areas that have been previously disturbed and now primarily support non-native vegetation with some weedy native vegetation that is well-adapted to disturbed conditions and high nitrogen soils. These areas occur adjacent to the developed areas or in the more upland areas of the SBC reaches. Species present in these areas include western sunflower, Italian thistle, white sweetclover, curly dock (*Rumex crispus*), bermuda grass (*Cynodon dactylon*), tall umbrella-sedge (*Cyperus eragrostis*), willow weed (*Persicaria [Polygonum] lapthifolium*), annual beard grass (*Polypogon monspeliensis*), shortpod mustard (*Hirschfeldia incana*), smilo grass (*Piptatherum miliaceum*), Douglas' nightshade (*Solanum douglasii*), common horseweed (*Erigeron canadensis*), radish (*Raphanus sativus*), castor bean (*Ricinus communis*), and garland daisy (*Glebionis coronaria* [*Chrysanthemum coronarium*]). Scattered sandbar willow (*Salix exigua*) and mule fat (*Baccharis salicifolia*) were also present in these areas.

Ruderal/open water areas are present in Reaches 40b and 41. These areas are dominated by the ruderal species listed above that have been flooded by approximately one foot or more of water. These areas are generally outside the low-flow channel and, at some locations, the flooded area extends from the toe of slope to toe of slope of the SBC reaches.

Ruderal marsh is present in Reach 44. This vegetation type is dominated by low-growing herbaceous non-native species that are either rooted in the water or rooted directly adjacent to the water. The ruderal marsh in these SBC reaches is dominated by willow weed, white sweetclover, and tall umbrella-sedge. Scattered bulrush (*Scirpus* sp.) was also present in these areas.

Freshwater marsh is present in Reaches 40a, 40b, 43b, and 44. This native vegetation type is dominated by bulrush and cattails (*Typha* spp.), which are emergent plants that grow in one or more feet of water. This vegetation type is typically found adjacent to the open water areas of the SBC reaches. This vegetation type's boundaries are constantly changing due to changes in the water levels and the rapid growth of this species. Plant species in low densities within the bulrush and cattails include sedges (*Cyperus* spp.), willow weed, and great marsh evening primrose (*Oenothera elata* ssp. *hirsutissima*) with occasional scattered mature Goodding's black willows.

Mixed willow riparian scrub is present at Reaches 40a, 40b, 41, 42, 43b, and 44. This native vegetation type is dominated by Goodding's black willow, arroyo willow (*Salix lasiolepis*), and narrow-leaved willow (*Salix exigua*). This vegetation type typically consists of relatively small stands of willows. The willows are of various sizes and heights due to differing frequencies of scouring from rain events. The willows range from seedlings to trees, the tallest of which are approximately 20 feet high. This vegetation type differs from the willow riparian forest vegetation type by the size of the patch; the overall height of the patch; and the density of the understory. The understory in mixed willow riparian scrub varies at each SBC reach in the amount of non-native and native herbaceous species to unvegetated wash under the trees. The herbaceous species in some of the understory areas include mule fat, mugwort (*Artemisia douglasiana*), giant reed (*Arundo donax*), hoary nettle (*Urtica dioica* ssp. *holosericea*), desert wild grape (*Vitis girdiana*), and California dodder (*Cuscuta californica*).

Mixed willow riparian forest is present at Reaches 40b, 43a, 43b, 44, and 98. This native vegetation type is dominated by Goodding's black willow. This vegetation type varies from the mixed willow riparian scrub vegetation type described above in that the canopy contains larger trees (i.e., greater than 20 feet in height) and the canopy tends to be more dense. The mixed willow riparian forest has more than a few large willow trees in each patch; has trees over 20 feet

tall; and has a denser understory. The understory is sparse and dominated by willow seedlings and saplings with the occasional mule fat and giant reed distributed throughout.

Mule fat scrub is present in Reaches 39, 40a, 40b, 43a, 43b, and 44. This native vegetation type is dominated by mule fat, with scattered narrow-leaved willow, willow weed, western sunflower (*Helianthus annuus*), California dodder, great marsh evening primrose, Douglas' nightshade, and non-native species such as castor bean, curly dock, shortpod mustard and Spanish sunflower (*Pulicaria paludosa*).

Coast live oak woodland is present in Reach 98. This native vegetation type is dominated by dense stands of coast live oak (*Quercus agrifolia*) rooted in or adjacent to the banks of the SBC reach. The understory is dominated by native and non-native species such as mugwort, narrow leaved bedstraw (*Galium angustifolium*) ornamental species such as English ivy (*Hedera helix*); and ruderal species such as smilo grass and other non-native grasses.

Ornamental areas are present in Reaches 40a and 44. This non-native vegetation type consists of introduced trees and shrubs planted for aesthetic purposes. A wide variety of ornamental landscaping occurs adjacent to the SBC reaches in conjunction with existing developments. Many of these ornamental species (including trees, shrubs, and other ground covers) have spread into the channel reaches in varying amounts. Ornamental vegetation has formed large patches in some channel reaches. Reach 40a has an ornamental area occurring in the center of the SBC reach which is dominated by mature mulberry trees (*Morus* sp.). SBC Reach 44 has ornamental areas present dominated by ash trees (*Fraxinus* sp.), carob trees (*Ceratonia siliqua*), and gum trees (*Eucalyptus* spp.).

Unvegetated wash is present in Reaches 40a, 40b, 41, 43b, and 44. Unvegetated wash is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. Unvegetated wash in the SBC reaches consists of bare sand or silt that does not contain any vegetation. These areas have been scoured and are typically colonized by riparian vegetation following scouring events.

Open water was present at the time of surveys and mapped in all nine SBC reaches of this feasibility study. Open water is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. Open water typically consists of fresh water in the center of the SBC reaches that was either flowing or ponding. These areas generally contain little to no vegetation.

Disturbed areas are present in Reach 43a. This is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. In this SBC reach, disturbed areas primarily consist of dirt roads. These areas typically contain exposed soil without concrete or development and little to no vegetation.

Ungrouted riprap is present in Reaches 40a and 40b. Both grouted riprap and riprap that is not grouted are generally mapped as developed areas on vegetation maps. Ungrouted riprap, however, can support substantial amounts of vegetation while grouted riprap typically supports very little vegetation. As a result, ungrouted riprap is delineated as a separate mapping unit on the vegetation maps. Ungrouted riprap is present on portions of the channel banks. Most vegetation present in ungrouted riprap in these two SBC reaches consists of ornamental and non-native ruderal species.

Developed areas are present in Reaches 39, 40a, 40b, 41, 42, 43a, 43b, and 44. This is not a vegetation type, but is delineated as a mapping unit on the vegetation maps. These areas are man-made structures that contain little to no vegetation. Any vegetation that is present typically consists of non-native ruderal species similar to that described above or invasive species such as fan palms (*Washingtonia* sp.), tree of heaven (*Ailanthus altissima*), and tree tobacco (*Nicotiana glauca*).

3.1.2 Special Status Plant Surveys

Focused surveys for special status plant species are conducted on a periodic basis for the 100 plus SBC reaches maintained by the LACFCD, including the San Gabriel River Watershed. These special status plant species surveys are discussed in more detail below for the SBC reaches covered by this Report.

Habitat assessments for federally and/or State-listed special status plant species were conducted for the LACFCD's SBC maintenance program in 2002. Although potentially suitable habitat for the federally and State-listed Endangered slender-horned spineflower (*Dodecahema leptoceras*) was identified at several SBC reaches, surveys were not conducted in 2002 due to the prevailing drought conditions. The slender-horned spineflower is an annual species that appears only after seasons with sufficient rainfall. The federally and State-listed Endangered Nevin's barberry (Berberis nevinii), a large and conspicuous shrub that can be identified year-round, was not present at any of the SBC reaches (including Reaches 39, 40a, 40b, 43a, 43b, and 44 of the San Gabriel River Watershed) that were identified as having potentially suitable habitat during the 2002 habitat assessments (BonTerra 2002). After a season of sufficient rainfall, focused surveys were conducted in 2003 for the slender-horned spineflower at all LACFCD SBC reaches with potentially suitable habitat for this species. In 2003, these reaches included one SBC reach in the San Gabriel Watershed (i.e., Reach 39). The 2003 focused survey results for slender-horned spineflower were negative at all LACFCD SBC reaches, including the Reach 39 of the San Gabriel River Watershed. No further surveys were recommended as long as the existing maintenance plan and associated access routes were followed (BonTerra 2003).

As part of this Report, focused surveys for special status plant species were performed in 2011 at each of the SBC reaches in the San Gabriel River Watershed by BonTerra Biologists Jennifer Pareti, Jeff Crain, and Allison Rudalevige and Consulting Botanist Sandra Leatherman. The survey dates and personnel are listed below in Table 3. Each of the SBC reaches was surveyed twice during 2011 (in April/May, and July/August), except for SBC Reaches 42, 43a, 43b, and 98, which did not present habitat suitable for the summer blooming southern tarplant (*Centromadia parryi* var. *parryi*).

TABLE 3
FOCUSED PLANT SURVEY DATES AND PERSONNEL

Reach	Early Survey	Surveyors	Late Survey	Surveyors	
39	April 22, 2011	Pareti, Leatherman	August 1, 2011	Pareti, Leatherman	
40a	May 3, 2011	Rudalevige, Crain	July 22, 2011	Pareti, Leatherman	
40b	May 3, 2011	Rudalevige, Crain	July 22, 2011	Pareti, Leatherman	
41	May 2, 2011	Dudalaviga Crain	July 22, 2011	Pareti, Leatherman	
41	May 3, 2011	Rudalevige, Crain	July 27, 2011	Pareti, Leatherman	
42	April 22, 2011	Pareti, Leatherman	no	survey	
43a	May 3, 2011	Pareti, Leatherman	no	survey	
43b	May 3, 2011	Pareti, Leatherman	no	survey	
44	May 3, 2011	Pareti, Leatherman	August 1, 2011	Pareti, Leatherman	
98	April 22, 2011	Pareti, Leatherman	no survey		

No special status plant species were observed at the nine SBC reaches in the San Gabriel River Watershed. The complete focused plant survey is included in Appendix B.

3.1.3 **Special Status Wildlife Surveys**

Focused surveys for special status wildlife species are conducted on a regular basis for the 100 plus SBC reaches managed by the LACFCD. Table 4 provides a summary of these surveys performed at the SBC reaches discussed in this Report. These special status wildlife species surveys are discussed in more detail below.

TABLE 4 FOCUSED SURVEY RESULTS SUMMARY FOR WILDLIFE

Reach Number	Reach Name	Santa Ana Sucker	Arroyo Toad	California Red-Legged Frog	Southwestern Willow Flycatcher	Least Bell's Vireo
39	Beatty Channel Outlet @ SGR 25+99.00	HA 2002: no habitat; however, it was determined that potentially suitable habitat may be present in other years so pre-clearing surveys are required. Negative FS results through 2014.	N/A	2002 HA: no suitable habitat/no further surveys warranted	FS: 2005, 2007, 2009, 2011, 2013; negative survey results.	FS: 2005 (1 territory-pair); 2007 (2 territories-pairs); 2009 (4 territories-3 pairs/solitary male); 2011 (3 territories-pairs); 2013 (2 territories-pairs).
40a	San Gabriel River (Santa Fe Dam to I-10 Freeway)	N/A	N/A	2002 HA: no suitable habitat/no further surveys warranted.	N/A	N/A
40b	San Gabriel River (I-10 Freeway to Thienes Ave)	N/A	N/A	2002 HA: no suitable habitat/no further surveys warranted.	FS: 2002, 2003, 2005, 2007, 2009, 2011, 2013; negative survey results.	FS: 2002 (2 territories- pair/solitary male); 2003 (negative); 2005 (negative); 2007 (3 territories-pairs); 2009 (2 territories-pair/solitary male); 2011 (4 territories-pairs); 2013 (5 territories (4 pairs/solitary male).
41	Walnut Creek	N/A	N/A	N/A	N/A	N/A
42	San Jose Creek d/s 1,000 ft from end of concrete	N/A	N/A	N/A	N/A	N/A
43a	San Gabriel River (Upper)	N/A	N/A	2002 HA: no suitable habitat/no further surveys warranted.	FS: 2002, 2003, 2005, 2007, 2009, 2011, 2013; negative survey results.	FS: 2002 (1 territory-pair); 2003 (1 territory-solitary male); 2005 (1 territory-pair); 2007 (1 territory- pair); 2009 (4 territories-3 pairs/solitary male); 2011 (4 territories-2 pairs/2 solitary males); 2013 (3 territories-2 pairs/solitary male).
43b	San Gabriel River (Lower)	N/A	N/A	2002 HA: no suitable habitat/no further surveys warranted.	FS: 2002, 2003, 2005, 2007, 2009, 2011, 2013; negative survey results.	FS: 2002 (male with begging juvenile – one day observation); 2003 (negative); 2005 (negative); 2007 (negative); 2009 (1 territory-solitary male); 2011 (negative); 2013 (negative).

TABLE 4 FOCUSED SURVEY RESULTS SUMMARY FOR WILDLIFE

Reach Number	Reach Name	Santa Ana Sucker	Arroyo Toad	California Red-Legged Frog	Southwestern Willow Flycatcher	Least Bell's Vireo
44	San Gabriel River – Rubber Dams	N/A	N/A	N/A	N/A	N/A
98	Inlet Walnut Creek	N/A	N/A	N/A	N/A	N/A

HA: habitat assessment survey; FS: focused survey (survey areas include a 500ft buffer); N/A: Not Applicable (no suitable habitat and/or outside known range); I: Interstate; d/s: downstream; ft: feet;

As required by the regulatory permits, annual focused (pre-clearing) surveys for the State- and federally listed Endangered unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) and federally listed Threatened Santa Ana sucker (*Catostomus santaanae*) are conducted in those SBC reaches with appropriate habitat. The unarmored threespine stickleback no longer occurs in the Los Angeles River Watershed, but the Santa Ana sucker is present in the West, North, and East forks of the upper San Gabriel River of the Angeles National Forest. Of the nine SBC reaches surveyed for this Report, only Beatty Channel Outlet (Reach 39) was identified in 2002 as having the potential to support the Santa Ana sucker (BonTerra 2002). This SBC reach is a side outlet within the San Gabriel River upstream of the I-210 Freeway and, since 2002, has usually contained sufficient amounts of water for focused surveys (seining). The Santa Ana sucker has been absent in all surveys conducted at Reach 39 since 2002. The most recent 2013 fish survey report prepared for the LACFCD's SBC maintenance program is included as Appendix C.

Habitat assessments were conducted in 2002 for the federally listed Endangered arroyo toad (*Anaxyrus californicus*) and federally listed Threatened California red-legged frog (*Rana draytonii*) at those LACFCD SBC reaches within the known range of the species. The arroyo toad occurs in the Santa Clara River Watershed, but not the Los Angeles River Watershed. Therefore, no habitat assessments for the arroyo toad were conducted in 2002 at any of the SBC reaches addressed in this Report. At that time, the final designation of Critical Habitat for the California red-legged frog included areas in the vicinity of Big Tujunga Creek (USFWS 2001). As a result, habitat assessments for the California red-legged frog were conducted in 2002 at SBC reaches in the general area surrounding Big Tujunga Creek. These habitat assessments were also conducted in the San Gabriel River Watershed and included Reaches 39, 40a, 40b, 43a, and 43b. These surveys found no suitable habitat for the California red-legged frog at any of these SBC reaches and concluded that no further surveys for the species were required (BonTerra 2002).

Focused surveys for the southwestern willow flycatcher (Empidonax traillii extimus) and least Bell's vireo (Vireo bellii pusillus), which are both State- and federally listed Endangered Species. have been conducted at those SBC reaches in the San River Watershed that contain potentially suitable habitat for these two bird species. In 2002, surveys were conducted at Reaches 40a, 40b, 43a, and 43b, but only at 40b, 43a, and 43b in 2003 as it was determined that 40a does not provide suitable habitat for either the southwestern willow flycatcher or least Bell's vireo (BonTerra 2002, 2003). Focused surveys were initiated in 2005 at Reach 39 after annual habitat assessment surveys determined that potentially suitable habitat was present for these two bird species. The survey results have been negative for southwestern willow flycatcher at all reaches in the San Gabriel River Watershed (see Table 4). The least Bell's vireo, however, has occupied the San Gabriel River Watershed Reaches 39, 40b and 43a with a small but growing population: two territories in 2002 and ten territories in 2013. Reach 43b, immediately downstream of Reach 43a, has supported minimal least Bell's vireo activity with only one territory established in 2009. Although willow trees are fairly numerous in Reach 43b, the dense layer of understory vegetation necessary for nesting least Bell's vireo is lacking in this SBC reach. Reach 43b, however, is expected to occasionally support some least Bell's vireo activity during the breeding season due to its proximity to Reach 43a. For example, a male least Bell's vireo with a begging juvenile observed in willows at the upstream end of Reach 43b on July 9, 2002, was presumed to have wandered from a territory established elsewhere, but most likely from the suitable breeding habitat upstream in Reach 43a. The most recent 2013 focused survey report for the southwestern willow flycatcher and least Bell's vireo prepared for the LACFCD's SBC maintenance program is included as Appendix D.

3.1.4 Summer Season Bird Surveys

In conjunction with the plant surveys discussed above, summer season surveys for birds were conducted at each of the nine SBC reaches. These surveys focused on detecting and identifying all the birds using the habitats in these nine SBC reaches (Table 5). These surveys were conducted by BonTerra Psomas Senior Biologist/Ornithologist Brian E. Daniels on June 23 and 24, 2011. Since these surveys were performed after the spring migration season, most of the bird species recorded can be assumed to be breeding or potentially breeding in or near the SBC reach in which they were observed.

TABLE 5
RESULTS OF SUMMER SEASON BIRD SURVEYS

				Reac	h Num	bers			
Species	39	40a	40b	41	42	43a	43b	44	98
Canada goose (Branta canadensis)							1		
gadwall (Anas strepera)								8	
mallard (Anas platyrhynchos)			20	15	30	12	40	50	
cinnamon teal (Anas cyanoptera)			3		2				
California quail (Callipepla californica)	15								
pied-billed grebe (Podilymbus podiceps)							2	2	
double-crested cormorant (Phalacrocorax auritus)			1			1	2	3	
great blue heron (Ardea herodias)			1				4		
great egret (Ardea alba)			1				2	4	
snowy egret (<i>Egretta thula</i>)			2			2	10	10	
green heron (Butorides virescens)						1	1	1	
black-crowned night-heron (Nycticorax nycticorax)			1				6	5	
Cooper's hawk (Accipiter cooperii)						1	1		
red-shouldered hawk (Buteo lineatus)								1	1
red-tailed hawk (Buteo jamaicensis)		1						1	
common gallinule (Gallinula galeata)							1		
American coot (Fulica americana)								3	
black-necked stilt (Himantopus mexicanus)				5	20				
killdeer (Charadrius vociferous)		2	2	4	4		2	6	
spotted sandpiper (Actitis macularius) ²				1					
western gull (Larus occidentalis)			2		615		1		
California gull (Larus californicus)			1		15				
rock pigeon (<i>Columba livia</i>)*		25		5		5	5	15	
Eurasian collared-dove (Streptopelia chinensis)*			1	12				2	
mourning dove (Zenaida macroura)	4	1	1	1		2	3		
white-throated swift (Aeronautes saxatalis)		2		2				2	
black-chinned hummingbird (Archilochus alexandri)			1						1
Anna's hummingbird (Calypte anna)	1		2			2			
Costa's hummingbird (Calypte costae)	1								
Allen's/rufous hummingbird (Selasphorus sasin or rufus)	2		1						1
acorn woodpecker (Melanerpes formicivorus)									1
Nuttall's woodpecker (Picoides nuttallii)						1	1		
downy woodpecker (Picoides pubescens)						2			
American kestrel (Falco sparverius)		4	1						

TABLE 5 RESULTS OF SUMMER SEASON BIRD SURVEYS

	Reach Numbers										
Species	39	40a	40b	41	42	43a	43b	44	98		
peregrine falcon (Falco peregrinus)				1							
Pacific-slope flycatcher (Empidonax difficilis)						1					
black phoebe (Sayornis nigricans)	2	1	2	4	4	3	3	5	2		
ash-throated flycatcher (Myiarchus cinerascens)						1					
Cassin's kingbird (Tyrannus vociferans)			2			2		2			
Bell's vireo (Vireo bellii)			1			6					
Hutton's vireo (Vireo huttoni) 2						1					
western scrub-jay (Aphelocoma californica)	6						2		2		
American crow (Corvus brachyrhynchos)			2			10	10	10	4		
common raven (Corvus corax)		1					1	2			
northern rough-winged swallow (Stelgidopteryx serripennis)	2		1	4	2	4	8	30			
cliff swallow (Petrochelidon pyrrhonota)	5		4			10	25	30			
barn swallow (Hirundo rustica)		4	6	4		5	8	15			
oak titmouse (Baeolophus inornatus) 2									2		
bushtit (Psaltriparus minimus)	10					25	10				
house wren (Troglodytes aedon)						1					
Bewick's wren (Thryomanes bewickii)	3										
wrentit (Chamaea fasciata)	2										
American robin (Turdus migratorius)						2					
California thrasher (Toxostoma redivivum)	1										
northern mockingbird (Mimus polyglottos)	4		2	2			3	5			
European starling (Sturnus vulgaris)*		5	45		1		5				
orange-crowned warbler (Oreothlypis celata)						1			1		
common yellowthroat (Geothlypis trichas)	4		10	5		20	15	5			
yellow warbler (Setophaga petechia) 1	1					18	4	6			
yellow-breasted chat (Icteria virens) 1	2					8					
spotted towhee (Pipilo maculatus)	1					4					
California towhee (Melozone crissalis) ²	2		3	2		5	3	3	1		
song sparrow (Melospiza melodia)	8		15	4		20	12	10	1		
northern cardinal (Cardinalis cardinalis)*						1					
black-headed grosbeak (Pheucticus melanocephalus) 2						1					
blue grosbeak (Passerina caerulea)		1	1			3		1			
red-winged blackbird (Agelaius phoeniceus)	2		8				10				
Brewer's blackbird (Euphagus cyanocephalus)					1						
great-tailed grackle (Quiscalus mexicanus)	1		1			1	1	2			
brown-headed cowbird (Molothrus ater)	1		4			1		1	1		
hooded oriole (Icterus cucullatus)							1		1		
Bullock's oriole (Icterus bullockii)			2			2			1		
house finch (Haemorhous mexicanus)	3	2	3	10		15	10	10	2		
lesser goldfinch (Spinus psaltria)	4		5	4		20	5		2		
American goldfinch (Spinus tristis)	5		8	4		15		1			
house sparrow (Passer domesticus)*			2	5			2	15			

TABLE 5 RESULTS OF SUMMER SEASON BIRD SURVEYS

				Reac	h Num	bers			
Species	39	40a	40b	41	42	43a	43b	44	98
scaly-breasted munia (Lonchura punctulata)*						2			
orange bishop (Euplectes franciscanus)**	1		2						
TOTAL SPECIES	27	12	38	20	10	40	36	33	16
TOTAL INDIVIDUALS	93	49	170	94	694	237	220	266	24

^{*} Introduced non-native species with established breeding population in California.

The presence of water in any of these SBC reaches, especially during the summer, can be an important component of high quality habitat for birds. As indicated by the number of waterbirds present during these surveys, the surface water that was available in Reaches 40b, 41, 42, 43a, and 44 was fairly substantial. Although not listed as special status species, the cinnamon teal (*Anas cyanoptera*) at Reaches 40b and 42 and common gallinule (*Gallinula galeata*) at Reach 43b are uncommon and local summer residents in the region. Surface water typically increases, sometimes considerably, the diversity and abundance of birds that use these SBC reaches. For example, the 615 western gulls (*Larus occidentalis*) present in Reach 42 during the survey were there to drink and bathe in the plentiful water of that SBC reach (bank to bank flowing water). Without the water, there would be no other reason for the gulls to congregate at Reach 42.

The highest species totals were recorded at Reaches 43a and 40b, with 40 and 38 species, respectively. Both these SBC reaches also support the State- and federally listed Endangered least Bell's vireo (see discussion above of Special Status Wildlife Surveys under Section 3.0) with a total of six individuals counted at Reach 43a and one individual at Reach 40b (see Table 5). The six individuals at Reach 43a were observed on June 24, 2011, and consisted of an adult pair feeding two fledglings and two singing males. The one least Bell's vireo detected on June 23, 2011, at Reach 40b was a singing male. These summer season bird surveys were conducted in the same time period in which focused surveys were conducted for least Bell's vireo at all these two SBC reaches. Reach 43a supported four least Bell's vireo territories that consisted of two pairs (mated male and female) and two solitary males (unmated males) and Reach 40b supported four territories, each with a mated pair (see Table 4). Focused surveys consist of multiple surveys conducted throughout the breeding season that employ methods intended to find each individual of the species; other species recorded are incidental to the purpose of those surveys. The summer season bird surveys were one-day surveys that employed methods intended to measure the diversity of abundance of all species that use the SBC reach.

^{**} Exotic or escaped non-native species that may or may not be breeding in California

Listed as a California Bird Species of Special Concern (Shuford and Gardali 2008)

On the Los Angeles County Bird Watchlist (Los Angeles County Sensitive Bird Species Working Group 2009)

TABLE 6 SUMMER BIRD DIVERSITY AND ABUNDANCE AT THE NINE SOFT-BOTTOM CHANNEL REACHES (RANKED HIGH TO LOW FOR BIRD DENSITY)

Reach Number	Reach Name	Area (acres)	Total Bird Species/ Species Diversity (species per acre)	Total Bird Abundance/ Bird Density (birds per acre)
39	Beatty Channel Outlet @SGR 25+99.00	0.26	27/103.85	93/357.69
98	Walnut Creek – Channel Inlet, SD1	0.14	16/114.29	45/321.43
42	San Jose Creek d/s 1,000 ft from end of concrete	2.73	10/3.66	694/254.21
43b	San Gabriel River – Lower	22.07	36/1.63	220/9.97
43a	San Gabriel River – Upper	52.83	40/0.76	237/4.49
41	Walnut Creek	40.90	20/0.49	94/2.30
44	San Gabriel River – Rubber Dams	149.00	33/0.22	266/1.79
40b	San Gabriel River – I-10 Freeway to Thienes Ave	127.10	38/0.30	170/1.34
40a	San Gabriel River – Santa Fe Dam to I-10 Freeway	161.76	12/0.07	24/0.15
d/s: downs	tream; ft: feet; I: Interstate			

Table 6 above ranks the nine channel reaches of this Feasibility Study from high to low based on bird density derived from the one-day summer season bird surveys. The small channel reaches (Reaches 39, 98, and 42) are ranked highest due in part to the presence of abundant water on the channel invert that attracts birds from surrounding area, but also due to edge effects¹ inherent with small study sites. In particular, San Jose Creek (Reach 42), provides regular flowing water from the San Jose Water Reclamation Plant. This open water habitat attracts large numbers of gulls in transit to and from landfills. In between feeding at landfills, gulls bathe, drink, and loaf at bodies of water. As Table 5 above shows, a total of 615 western gulls (Larus occidentalis) is exceptional relative to the overall numbers of birds recorded at the 9 channel reaches included in this study, but hundreds of gulls at Reach 42 is a regular mid-day occurrence. The Beatty Channel Outlet (Reach 39) is a narrow channel reach is a side outlet within the larger San Gabriel River. Reach 39 supports regular flows of released water from the San Gabriel Valley Municipal Water District and attracts birds from the surrounding habitats of the San Gabriel River. In dry years, such as the survey year for this study, the open water in Reach 39 is even more valuable to wildlife. Reach 98 is the soft-bottom inlet into the concrete flood control portion of the Walnut Creek channel. Water flows in Walnut Creek are regulated by periodic releases from Puddingston Reservoir. Although the environmental setting of Reach 98 is residential, the natural vegetation types on the banks of Walnut Creek merge into relatively substantial ornamental vegetation in neighboring backyards, forming an ecotone that often enhances existing biological value, especially for widespread urban-adapted bird species.

Of the larger channel reaches in this Feasibility Study (Reaches 40a, 40b, 41, 43a, 43b, and 44), the San Gabriel River – Lower (Reach 43b) supported the highest bird density. All nine SBC reaches in this Feasibility Study contained open water habitat during these surveys, but Reach

Edge effects occur at the boundary of dissimilar habitats. These effects can often be deleterious, especially for species considered to be ecological specialists. Species that thrive in these situations are considered to be generalists and are typically common and widespread species adapted for many different habitats. Edges or ecotones often support higher biodiversity.

43b contained open water that was receding. Not only can open water habitats provide bathing, drinking and loafing opportunities (such as described above for the gulls in Reach 42), but it can also provide foraging opportunities for many bird species. In particular, receding water levels can concentrate prey and, as a result, their predators. During these surveys, water levels were not only receding in Reach 43b, but also downstream in the six-mile-long Reach 44. Many waterbirds respond quickly to these conditions, particularly herons and egrets. Both Reaches 43b and 44 supported relatively large numbers of these species during these summer season bird surveys (see Table 5).

3.1.5 Migratory Bird Surveys

Migratory bird surveys were performed before and after LACFCD's annual fall maintenance activities at San Gabriel River SBC Reaches 43a and 43b. "Migratory birds" refer to those species that regularly migrate to and from distant areas where they nest and spend the winter. In North America, about 75 percent of breeding birds migrate, with the rest remaining year-round in the same general area (Sibley 2001). Peak migration periods in North America occur during the spring (April–May) and fall (September–October) seasons, but many bird migrations take place throughout the year, especially in warmer regions such as Southern California. Depending on the species, migrations occur at night (nocturnal) or during the day (diurnal) and are subject to a variety of environmental influences, particularly weather.

The migratory bird surveys were conducted by BonTerra Psomas Senior Biologist/Ornithologist Brian E. Daniels. The San Gabriel River SBC Reaches 43a and 43b were selected as they are contiguous and support similar habitats (willow dominated riparian habitats), but have differing maintenance patterns. In Reach 43a, polygons of willows with intact understory vegetation consisting primarily of mule fat are allowed to remain. Clearing of vegetation in Reach 43a is achieved by mowing, which occurs outside these protected polygons. Where large willows potentially obstruct flowing water, the lower branches are trimmed in a "lollypop" manner. No polygons of vegetation are protected in Reach 43b. Mature willows are allowed to remain in Reach 43b, and are generally located in the center of the channel reach next to the low flow channel. These willows are also trimmed in the "lollypop" manner and the understory vegetation is mowed.

The migratory bird survey results for Reaches 43a and 43b are shown below in Table 7. The preclearing surveys for both channel reaches were conducted in September 2011 during the peak of fall migration. The results for both SBC reaches show relatively few species that are confidently identified as "transients" (a term used for migratory birds being at a location for a relatively short stay during migration). Two species at Reach 43a, warbling vireo (Vireo gilvus) and Wilson's warbler (Cardellina pusilla), and two species at Reach 43b, warbling vireo and lazuli bunting (Passerina amoena), are clearly transients because neither species winters or summers at this location. In migration, willows and other trees provide valuable foraging habitat for the warbling vireo and Wilson's warbler, while weedy vegetation provides valuable foraging habitat for the lazuli bunting. As shown by the maps of vegetation types (see Appendix A), Reach 43a provides far more willow (trees) habitat (mixed willow riparian forest) relative to weedy habitat (ruderal). Reach 43b typically provides far more weedy habitat than willows, but the vegetation mapping survey was conducted during a period of receding water that left behind mud (mapped as unvegetated wash). Areas of mud in SBC reaches quickly becomes vegetated unless repeatedly inundated with water. At Reach 43b, areas of mud primarily become vegetated with ruderal species.

TABLE 7 MIGRATORY BIRD SURVEYS

	San Gabri Up _l Reacl	per		iel River – wer h 43b
Species	Sept. 12, 2011	Nov. 9, 2011	Sept. 12, 2011	Nov. 9, 2011
Canada goose (Branta canadensis)				4
American wigeon (Anas americana)				25
mallard (Anas platyrhynchos)	5	12	8	20
cinnamon teal (Anas cyanoptera)				2
northern pintail (Anas acuta)				1
green-winged teal (Anas crecca)				2
pied-billed grebe (Podilymbus podiceps)	4			3
great blue heron (Ardea herodias)	1		3	3
great egret (Ardea alba)		5	1	
snowy egret (Egretta thula)	2			4
green heron (Butorides virescens)		1	2	
black-crowned night-heron (Nycticorax nycticorax)		2	6	
turkey vulture (Cathartes aura)			3	
sharp-shinned hawk (Accipiter striatus)		1		
red-shouldered hawk (Buteo lineatus)	1	1		
red-tailed hawk (Buteo jamaicensis)		1		3
common gallinule (Gallinula galeata)	1		1	
American coot (Fulica americana)		20		190
killdeer (Charadrius vociferus)			2	2
spotted sandpiper (Actitis macularius)			1	1
greater yellowlegs (Tringa melanoleuca)			1	
least sandpiper (Calidris minutilla)			9	
western gull (Larus occidentalis)	1			
California gull (Larus californicus)		3		
rock pigeon (Columba livia)*	12	10	2	18
Eurasian collared-dove (Streptopelia decaocto)*			1	
mourning dove (Zenaida macroura)	10	6	2	
black-chinned hummingbird (Archilochus alexandri)	1			
Anna's hummingbird (Calypte anna)	9	10	1	
Allen's/rufous hummingbird (Selasphorus sasin or rufus)	1			
belted kingfisher (Ceryle alcyon)			1	1
Nuttall's woodpecker (Picoides nuttallii)	2			1
downy woodpecker (Picoides pubescens)	2	2	1	
northern flicker (Colaptes auratus)		2		
American kestrel (Falco sparverius)			1	1
red-crowned Parrot (Amazona viridigenalis)*	42			
black phoebe (Sayornis nigricans)	9	15	5	5
Say's phoebe (Sayornis saya)		2	1	
Cassin's kingbird (<i>Tyrannus vociferans</i>)	4	5	2	1

TABLE 7 MIGRATORY BIRD SURVEYS

	San Gabri Up Reac		San Gabriel River – Lower Reach 43b		
Species	Sept. 12, 2011	Nov. 9, 2011	Sept. 12, 2011	Nov. 9, 2011	
western kingbird (<i>Tyrannus verticalis</i>)			1		
Bell's vireo (Vireo bellii)	1				
hutton's vireo (<i>Vireo huttoni</i>)		1			
warbling vireo (<i>Vireo gilvus</i>)	1		1		
western scrub-jay (Aphelocoma californica)	1		1	2	
American crow (Corvus brachyrhynchos)		13		6	
common raven (Corvus corax)	2	1	2		
barn swallow (<i>Hirundo rustica</i>)			1		
bushtit (<i>Psaltriparus minimus</i>)	80	40	15	20	
house wren (<i>Troglodytes aedon</i>)	4	6	1		
Bewick's wren (<i>Thryomanes bewickii</i>)	3	3			
ruby-crowned kinglet (Regulus calendula)		3			
western bluebird (Sialia mexicana)		6			
hermit thrush (Catharus guttatus)		1			
American robin (<i>Turdus migratorius</i>)		2			
northern mockingbird (<i>Mimus polyglottos</i>)		2	4	2	
European starling (Sturnus vulgaris)*			1		
American pipit (Anthus rubescens)		15			
orange-crowned warbler (Oreothlypis celata)	2	6			
Nashville warbler (Oreothlypis ruficapilla)		2			
common yellowthroat (Geothlypis trichas)	54	39	22	7	
yellow warbler (Setophaga petechia)	2		1		
yellow-rumped warbler (Setophaga coronata)		39		16	
black-throated gray warbler (Setophaga nigrescens)		1		1	
Wilson's warbler (Cardellina pusilla)	3				
spotted towhee (Pipilo maculatus)	4	1			
California towhee (Melozone crissalis)	13	9	2		
savannah sparrow (Passerculus sandwichensis)			11		
song sparrow (Melospiza melodia)	36	32	23	1	
white-crowned sparrow (Zonotrichia leucophrys)		17		15	
black-headed grosbeak (Pheucticus melanocephalus)	1				
blue grosbeak (Passerina caerulea)			1		
lazuli bunting (Passerina amoena)	3		3		
red-winged blackbird (Agelaius phoeniceus)	2	14	6	8	
Brewer's blackbird (Euphagus cyanocephalus)	2				
brown-headed cowbird (Molothrus ater)	35				
house finch (Haemorhous mexicanus)	90	19	4	2	
lesser goldfinch (Spinus psaltria)	30	13	2		

TABLE 7 MIGRATORY BIRD SURVEYS

		iel River – per h 43a	San Gabriel River – Lower Reach 43b		
Species	Sept. 12, 2011	Nov. 9, 2011	Sept. 12, 2011	Nov. 9, 2011	
American goldfinch (Spinus tristis)	5	14	1		
mutmeg mannikin (Lonchura punctulata)*	5		6	10	
TOTAL SPECIES	40	42	42	31	
TOTAL BIRD ABUNDANCE/BIRD DENSITY (bird per acre)	486 (9.2)	397 (7.5)	163 (7.4)	377 (17.1)	

* Introduced Species – Non-native species that have received recognition by the California Bird Records Committee (CBRC) as having established breeding populations in California.

Other species observed during the September 12, 2011, survey with the potential to have summered and/or winter at these two SBC reaches, but are considered more likely to have been transients included the spotted sandpiper (*Actitis macularius*), greater yellowlegs (*Tringa melanoleuca*), least sandpiper (*Calidris minutilla*), black-chinned hummingbird (*Archilochus alexandri*), western kingbird (*Tyrannus verticalis*), barn swallow (*Hirundo rustica*), orangecrowned warbler (*Oreothlypis celata*), yellow warbler (*Setophaga petechia*), black-headed grosbeak (*Pheucticus melanocephalus*), and blue grosbeak (*Passerina caerulea*). As with the "pure" transients discussed above, these species also have habitat preferences during migration. The sandpipers, including the greater yellowlegs, forage in shallow water and/or mud habitats. The warblers and black-headed grosbeak prefer trees while the blue grosbeak prefers to forage in weedy habitats. The barn swallow is an aerial forager that captures prey over all riparian habitats. Of these "pure" and "probable" transients identified during this survey, a total of five species and seven individuals were recorded in Reach 43a and nine species and 19 individuals were tallied in Reach 43b.

The post-clearing migratory bird surveys at Reaches 43a and 43b were conducted on November 9, 2011. Although November is past the peak migration period (September to October) for the fall season, migrants are still on the move into early winter, especially in Southern California. At this time of season, however, "pure" transients are scarce. Two migrant Nashville warblers (*Oreothlypis ruficapilla*) observed in Reach 43a are best considered as transients because they neither summer, nor are they expected to winter at this location. The migrant black-throated gray warblers (*Setophaga nigrecens*) found in Reaches 43a and 43b may also be transients, as they do not summer at this location, but small numbers regularly winter here.

The post-clearing surveys produced a total of 12 migrant species of 144 individuals at Reaches 43a and 43b that only winter at these locations. The Reach 43a total included the following eight species: sharp-shinned hawk (*Accipiter striatus*), northern flicker (*Colaptes auratus*), ruby-crowned kinglet (*Regulus calendula*), hermit thrush (*Catharus guttatus*), American pipit (*Anthus rubescens*), orange-crowned warbler (*Oreothlypis celata*), yellow-rumped warbler (*Setophaga coronata*), and white-crowned sparrow (*Zonotrichia leucophrys*). Migrants at Reach 43b included the following six species: American wigeon (*Anas americana*), northern pintail (*Anas acuta*), green-winged teal (*Anas crecca*), spotted sandpiper, yellow-rumped warbler (*Dendroica coronata*), and white-crowned sparrow.

4.0 **VEGETATION TRANSECTS**

BonTerra Psomas biologists quantitatively assessed the percent cover of the vegetation within each of the SBC reaches. The quantification was accomplished by selecting transect locations that were correlated to the maps that depicted Manning's or hydraulic roughness coefficient values (n values) developed by LACFCD hydrologists for the reaches. Transects were conducted before and after LACFCD's annual fall season maintenance activities. Each transect was conducted perpendicular to the flow of water (i.e., across the width of each reach). Global Positioning System (GPS) points were taken at both the beginning and ending locations for each transect. The start point of each transect was generally located at the top of the bank to the right when facing upstream. For SBC reaches that had flowing water and where the water was too deep to cross, the transect was broken up into three segments: A, B, and C. The A and B segments had GPS points taken at both the beginning and ending locations of the segment, with the starting point of each segment at the water's edge in the middle of the channel then working out to the top of the bank. The A segment was to the left when facing upstream, and the B segment was to the right when facing upstream. Segment C, the width of the open water (i.e., the span of the channel that was too deep to cross), was calculated to be the distance between the starting GPS points of Segments A and B across the water.

The point-intercept method at one-foot intervals along each transect was used to collect data. Except for sites with high diversity of plant species, the results of the line-intercept method do not differ significantly from the point-intercept method. Since the point-intercept method is less time consuming and since flood-control channels generally support relatively low diversity, the line-intercept method was selected as the most appropriate method for the vegetation transects. Table 8 below lists each reach and the distance of each transect. Data included identification and documentation of each plant species and the ground cover that occurred at one-foot intervals along each transect. Data workbooks are included as Appendix E, and the transect locations are shown on the vegetation maps of Appendix A. Non-native grass species were generally compiled together into one non-native grass category. Tree sizes were identified as mature, medium shrub, or seedling. Trees and other plants rooted on upper banks outside the drainage were not included in the data (i.e., the tree canopy of a tree rooted outside the channel was not included²). Photographs were also taken from the starting and ending points of each transect or transect segment.

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Note that this differs from the methods used to map vegetation types of the SBC reaches as tree canopies of trees rooted outside the banks of the channel were used to determine the vegetation type.

TABLE 8 **VEGETATION ANALYSIS TRANSECTS**

Reach No.	Transect No.	Transect Length (ft)	Reach No.	Transect No.	Transect Length (ft)
20	1	50		1	420
39	2	20	41	2	420
	1	320		3	420
	2	380		1	890
400	3	385	420	2	900
40a	4	480	43a	3	748
	5	500		4	500
	6	475	406	1	350
	1	480	43b	2	365
	2	480		1	375
	3	531		2	350
	4	540		3	365
40h	5	480	4.4	4	365
40b	6	555	44	5	314
	7	540		6	322
	8	525		7	342
	9	522		8	333
	10	480	98	1	65

No transect data was collected for Reach 42 since water covered the entire channel bottom.

4.1 PRE- AND POST-CLEARING VEGETATION TRANSECTS

Transect data was collected at each of the SBC reaches by BonTerra Psomas Senior Biologists Robert Allen, Brian Daniels, and Richard Lewis; Biologists Jeff Crain, Jason Mintzer, Jennifer Pareti and Rebecca Tyra; and Leatherman BioConsulting Senior Botanist Sandra Leatherman. Surveys were completed on August 16, 18, 26, and 29 and September 9, 12, 14, 16, 20, and 21, 2011, prior to the onset of LACFCD annual maintenance activities. These are the "pre-clearing" vegetation transects shown below in Table 9. Note that no transect data was collected at Reach 42 as flowing water covered the entire channel bottom prior to LACFCD clearing activities.

Transect data were also collected (using the same method as for pre-clearing transects) after maintenance activities on November 16, 17, 29, and 30 and December 19 and 20, 2011, by BonTerra Psomas Senior Biologist Mr. Allen, and BonTerra Psomas Biologists Jonathan Aguayo, Lindsay Messett, Mr. Mintzer, Ms. Pareti, and Allison Rudalevige. These transects were conducted at the same locations as the pre-clearing vegetation transects and are shown below in Table 9. Because vegetation clearing occurred for different SBC reaches on different dates, a variable but generally small amount of vegetative re-growth occurred before post-clearing transect data collection was performed. If vegetation clearing did not occur, no post-clearing transect data was collected. Of the nine SBC reaches in this study, vegetation clearing did not occur at Reach 42 and no pre- or post-clearing transect data was collected.

TABLE 9
TOTAL VEGETATED AND UNVEGETATED PERCENT COVER

		F	Pre-Vegetation C	learing	Po	ost-Vegetation (Clearing	Vegetation Clearing Effect on Percent Cover (Post-Clearing minus Pre- Clearing)			
Reach	Transect	% Native	% Non-native	% Unvegetated	% Native	% Non-native	% Unvegetated	% Native	% Non-native	% Unvegetated	
39	1	46.0	50.0	18.0	32.0	34.0	46.0	-14.0	-16.0	28.0	
39	2	10.0	75.0	25.0	20.0	60.0	35.0	10.0	-15.0	10.0	
	1	19.4	52.5	40.6	8.4	50.9	43.5	-11.0	-1.6	2.9	
	2	61.1	21.1	30.3	20.6	38.3	50.9	-40.5	17.2	20.6	
40a	3	10.4	27.1	67.6	11.2	48.7	49.7	0.8	21.6	-17.9	
40a	4	32.3	10.2	60.2	10.7	28.7	65.6	-21.6	18.5	5.4	
	5	21.6	17.4	62.0	9.6	29.7	66.9	-12.0	12.3	4.9	
	6	16.0	30.5	56.4	5.7	44.5	53.6	-10.3	14.0	-2.8	
	1	13.8	19.4	69.8	3.0	30.4	68.2	-10.8	11.0	-1.6	
	2	1.9	79.2	20.8	1.0	62.9	37.1	-0.9	-16.3	16.3	
	3	2.4	36.2	63.3	0.0	32.5	67.1	-2.4	-3.7	3.8	
	4	8.3	11.7	82.0	0.1	14.0	85.4	-8.2	2.3	3.4	
40b	5	15.8	52.3	42.3	3.9	23.0	74.9	-11.9	-29.3	32.6	
400	6	42.0	28.8	45.9	21.2	18.6	66.9	-20.8	-10.2	21.0	
	7	29.1	32.0	52.6	0.0	6.8	93.0	-29.1	-25.2	40.4	
	8	20.2	48.0	47.0	2.7	31.2	67.6	-17.5	-16.8	20.6	
	9	36.6	20.5	44.4	22.1	24.1	60.7	-14.5	3.6	16.3	
	10	38.1	34.4	49.0	8.7	39.8	59.4	-29.4	5.4	10.4	
	1	14.5	44.0	50.0	1.4	20.0	55.7	-13.1	-24.0	5.7	
41	2	10.0	26.0	66.2	2.6	37.4	60.5	-7.4	11.4	-5.7	
	3	9.0	60.2	39.3	0.0	53.1	46.7	-9.0	-7.1	7.4	
	1	30.0	66.4	22.7	39.1	32.0	45.0	9.1	-34.4	22.3	
43a	2	36.2	54.0	32.8	32.0	44.7	30.7	-4.2	-9.3	-2.1	
43a	3	35.4	62.2	20.7	24.2	39.7	41.4	-11.2	-22.5	20.7	
	4	9.0	70.4	25.4	15.6	39.2	46.3	6.6	-31.2	20.9	
43b	1	18.3	67.7	25.7	13.6	66.1	26.1	-4.7	-1.6	0.4	
430	2	28.5	57.3	21.9	17.5	42.6	43.0	-11.0	-14.7	21.1	

TABLE 9
TOTAL VEGETATED AND UNVEGETATED PERCENT COVER

		Pre-Vegetation Clearing			Post-Vegetation Clearing			Vegetation Clearing Effect on Percent Cover (Post-Clearing minus Pre- Clearing)			
Reach	Transect	% Native	% Non-native	% Unvegetated	% Native	% Non-native	% Unvegetated	% Native	% Non-native	% Unvegetated	
	1	49.6	41.1	38.1	31.1	45.5	34.6	-18.5	4.4	-3.5	
	2	14.0	38.3	54.9	18.8	28.2	61.2	4.8	-10.1	6.3	
	3	12.3	68.8	29.0	0.1	49.2	50.3	-12.2	-19.6	21.3	
44	4	3.3	32.9	67.1	0.0	12.3	87.7	-3.3	-20.6	20.6	
44	5	27.4	64.0	33.1	0.0	43.0	57.0	-27.4	-21.0	23.9	
	6	9.3	55.6	37.9	0.3	47.7	52.0	-9.0	-7.9	14.1	
	7	17.3	38.9	52.3	2.3	28.7	69.9	-15.0	-10.2	17.6	
	8	36.9	45.3	26.4	22.8	36.6	46.5	-14.1	-8.7	20.1	
98	1	21.5	80.0	18.5	10.8	24.6	64.6	-10.7	-55.4	46.1	
Av	erage	22.4	45.0	42.8	11.5	36.4	55.9	-11.0	-8.1	13.1	

Table 9 shows the results of the pre- and post-clearing transects of percent cover of native vegetation, non-native vegetation, and unvegetated areas for each of the nine SBC reaches in this study. Data in Table 9 also summarize the net changes in percent cover between pre- and post-clearing transects to measure the effect of vegetation clearing on percent cover relative to native vegetation, non-native vegetation, and unvegetated areas. The combined totals of 36 pre- and post-clearing vegetation transects on Table 9 for the SBC reaches show an average net loss of 11.0 percent cover and 8.1 percent cover for native and non-native vegetation, respectively, and an average net gain of 13.1 percent cover for unvegetated areas following the 2011 clearing activities conducted by the LACFCD.

The post-clearing transects were conducted in November and December 2011, about two months on average after completion of the LACFCD's annual fall clearing activities. Post-clearing transects performed immediately after clearing activities at each of these SBC reaches would have produced higher percentages of unvegetated areas. Regrowth is rapid, however, for most SBC reaches as winter rains generally occur not long after completion of the fall clearing activities.

5.0 CALIFORNIA RAPID ASSESSMENT METHOD ANALYSIS

5.1 METHODS/INTRODUCTION

The California Rapid Assessment Method (CRAM) is a wetland monitoring tool that is designed to quickly evaluate the overall condition of a wetland and to identify stressors that affect its condition. CRAM scores result from the evaluation of four equally weighted attributes: (1) buffer and landscape context; (2) hydrology; (3) physical structure; and (4) biotic structure (CWMW 2012). A summary of the ten metrics and six sub-metrics that comprise these attributes is provided in Table 10.

TABLE 10
DESCRIPTION OF CRAM ATTRIBUTES AND METRICS

Attribute		Metric	Description		
	Lands	scape Connectivity	Measures connectivity along the riparian corridor for wildlife movement; non-buffer land types are identified 500 meters upstream and downstream of Assessment Area.		
Buffer and Landscape	Buffe	r Condition	Combination of the three sub-metric score described below.		
Context	etrics	Percent of Assessment Area with Buffer	Measures percentage of Assessment Area perimeter that contains land cover types that provide a buffer.		
	Sub-metrics	Average Buffer Width	Measures the average width of identified buffer land types around Assessment Area.		
		Buffer Condition	Qualitatively evaluates buffer condition .		
	Wate	r Source	Qualitatively evaluates impacts to the extent, duration, and frequency of saturated or ponded conditions .		
Hydrology	Hydro	pperiod/Channel Stability	Qualitatively evaluates channel equilibrium, degradation, or aggradation.		
	Hydrologic Connectivity		Measures the entrenchment of the channel to determine the ability for water to inundate adjacent upland areas.		

TABLE 10 DESCRIPTION OF CRAM ATTRIBUTES AND METRICS

Attribute		Metric	Description		
Physical Structure	Struct	tural Patch Richness	Measures the diversity of physical riparian features that may potentially provide habitat for aquatic species (e.g., vegetated islands, pools, riffles).		
	Topog	graphic Complexity	Qualitatively evaluates the variety of elevations (i.e. micro-topographic heterogeneity).		
	Plant	Community	Average of the three sub-metric scores described below.		
	S	Number of Plant Layers	Identifies of number of plant strata.		
Biotic Structure	Sub-metrics	Number of Co-dominant Species	Identifies the number of co-dominant plant species based on visual estimation.		
Blotic Structure	-qns	Percent Invasive Species	Measures the percent of invasive plant species among the co-dominant species identified above.		
	Horizo	ontal Interspersion	Qualitatively evaluates the variety and distribution of plant associations.		
	Vertic	al Biotic Structure	Identifies the number and distribution of plant strata.		
Source: CWMW 2012.					

In 2006, the U.S. Environmental Protection Agency recommended a framework for comprehensive wetland monitoring to help States meet the requirements described in the Clean Water Act. This framework consists of the following three-tiered approach (USEPA 2006):

- Level 1 Assessments: Map-based inventories of wetland resources.
- Level 2 Assessments: Evaluation of general the wetland condition using relatively simple field indicators.
- Level 3 Assessments: Collection of quantitative data about selected functions or beneficial uses of wetlands.

CRAM is designed as a Level 2 Assessment tool that provides scientifically defensible, standardized data on the trends and condition of wetlands as well as stressors that affect wetlands (CWMW 2012). The ten metrics (and six sub-metrics) used in CRAM evaluations are derived from Level 3 studies that are designed to show relationships between the ecological functions of the wetlands and anthropogenic stress. Stein et al (2009) tested the validity of the CRAM approach by correlating CRAM scores to existing monitoring and assessment data on avian diversity, benthic macroinvertebrate indices, and plant community composition. The results of this analysis indicate that rapid assessment methods, including CRAM, can provide a meaningful and reliable tool for assessing wetland condition.

Each of the CRAM metrics is given a score of A (12 points), B (9 points), C (6 points), or D (3 points). CRAM scores for each of the four attributes range from 25 to 100. The four attribute scores are then averaged to determine the final CRAM score for a site. The final score is a relative measurement to indicate how an individual site compares to the best achievable conditions. For context, personnel associated with the Southern California Coastal Water Research Project (SCCWRP 2014) performed CRAM evaluations throughout the San Gabriel River Watershed. The highest score in this study was 91, recorded in areas of the upper San Gabriel River Watershed, while the lowest score was 35, recorded in the channelized mainstem of the river.

BonTerra Psomas Regulatory Specialist David Hughes visited each of the nine channel reaches in this feasibility study to perform the CRAM evaluation. Prior to visiting each channel reach, one or more Assessment Areas (AA) were identified on aerial photographs, consistent with CRAM guidelines. The AA is the CRAM study area for each channel reach; the number of AAs is dependent on the size of the area to be assessed and the variability of conditions. Generally, the minimum length of an AA is 100 meters; however, two of the channel reaches analyzed for this study were less than 100 meters in length (i.e., channel reaches 39 and 98). For these channel reaches, the AA was shortened to the total length of each channel because areas outside the boundaries of the channel reach were not consistent with conditions in the reach (e.g., considering an adjacent concrete-lined channel would lower the overall score).

Field investigation at all of the channel reaches consisted of performing channel measurements, visually estimating conditions, and identifying features on standardized checklists to determine scores for the following metrics and sub-metrics: buffer condition, hydroperiod/channel stability, hydrologic connectivity, structural patch richness, topographic complexity, number of plant layers, number of co-dominant species, percent invasive species, horizontal interspersion, and vertical biotic structure. The following metrics were initially analyzed in the office via aerial photo analysis with results confirmed or adjusted in the field: landscape connectivity, percent of AA with buffer, average buffer width, and water source.

As noted above, CRAM scores can range from a minimum score of 25 to a maximum score of 100. This range of scores can be split into five equal ranges that allow for categorization of ecological functioning, as summarized in Table 11. This categorization is not described in the CRAM User's Manual, but it is provided herein for the purpose of broadly categorizing each reach.

TABLE 11
CALIFORNIA RAPID ASSESSMENT METHOD FUNCTIONAL RATINGS

CRAM Score	Functional Rating
85.0–100.0	Very High
70.0–84.9	High
55.0–69.9	Moderate
40.0–54.9	Low
25.0–39.9	Very Low
CRAM: California Rapid Assessment Method	

5.2 RESULTS

A total of 16 AAs were established in the nine channel reaches. Generally, the number of AAs utilized was dependent on the length of the channel reach and the uniformity of the conditions (i.e., channels with heterogeneous conditions had more AAs). The number of AAs utilized in each channel reach and the results of the evaluation are summarized in Table 12 with a further breakdown of attribute scores in Table 13. Scores for the various AAs largely fell within the "moderate" and "low" functional rating categories. The highest CRAM score (68.1) is associated with the downstream end of Reach 40b which contains relatively large amounts of protected vegetation (i.e., vegetation not cleared annually) compared to other channel reaches. The lowest score (29.9) is associated with Reach 42 that contains minimal protected vegetation. The CRAM raw scores for each AA are provided in Appendix F. A summary of field conditions that determined the CRAM scores for each attribute is provided below.

TABLE 12
SUMMARY OF CALIFORNIA RAPID ASSESSMENT METHOD RESULTS

Reach No.	Linear Feet	Number of Assessment Areas	Range of Final Scores	Average Score	Functional Rating
39	145	1	_	38.4	Low
40a	22,582	3	40.2-61.8	53.3	Low
40b	8,788	3	58.0-68.1	61.3	Moderate
41	5,438	1	_	55.1	Moderate
42	800	1	_	29.9	Very Low
43a	3,066	1	_	54.7	Low
43b	3,434	1	_	60.8	Moderate
44	31,900	4	50.7–65.6	56.9	Moderate
98	80	1	-	44.7	Low

TABLE 13
SUMMARY OF CALIFORNIA RAPID ASSESSMENT
METHOD ATTRIBUTE SCORES

	CRAM Attributes					
Channel Reach No.	Buffer and Landscape Context	Hydrology	Physical Structure	Biotic Structure	Final Score ^a	
39	45.4	33.3	25.0	50.0	38.4	
40a	56.6	63.9	50.0	42.6	53.3 ^b	
40b	75.0	66.7	41.7	62.0	61.3 ^b	
41	67.7	50.0	50.0	52.8	55.1	
42	25.0	33.3	25.0	36.1	29.9	
43a	42.2	75.0	37.5	63.9	54.7	
43b	80.6	83.3	37.5	41.7	60.8	
44	73.4	70.8	37.5	45.8	56.9 ^b	
98	27.4	58.3	37.5	55.6	44.7	

CRAM: California Rapid Assessment Method

5.2.1 Buffer and Landscape Context Attribute

The various reaches generally scored well for the "Aquatic Area Abundance" metric (previously Landscape Connectivity). Though most of the AAs within the San Gabriel River were affected by drop structures and roadway overpasses, the effect was generally small, and most AAs received the maximum score. Areas that scored poorly for this metric were in Reaches 39, 42, and 98 as they were located adjacent to concrete channels that severely limited the connectivity of the reaches. The uppermost AA in Reach 40a also received a minimum score as it was located just downstream of Santa Fe Dam, which severely limits wildlife movement in this area. The AAs generally received maximum scores for the "Percent of AA with Buffer" sub-metric since buffering land types were generally located adjacent to the reaches. However, in some cases the AA was wide enough to reach the base of the riprap side levees in the San Gabriel River, which either reduced or eliminated a buffer land type. Buffers tend to be quite narrow and contain either an

^a Final score is calculated as the average of the four attribute scores

^b More than one Assessment Area was utilized for these channel reaches, the final score reflects the average score of the Assessment Areas.

intermediate or substantial amount of non-native vegetation. As a result, the "Average Buffer Width" and "Buffer Condition" sub-metrics generally received scores of 'C' or 'D'.

5.2.2 **Hydrology Attribute**

All of the AAs received a score of 'C' for the "Water Source" metric since urban runoff, managed hydrology, and the presence of developed land occur in more than 20 percent of the drainage basin for all reaches. The "Channel Stability" and "Hydrologic Connectivity" metrics received scores that varied significantly. For "Channel Stability," most of the AAs received a score of 'A' or 'B' since little or no sign of degradation (net loss of sediment through scour) or aggradation (net increase of sediment) was observed. This is presumably due to the presence of drop structures and dams that have moderated water flow rates and sediment transport through the San Gabriel River. In fact, after reviewing historical aerial photos of the San Gabriel River, the thalweg (lowest point in the channel) appears to have changed very little over time (in a natural system, the low flow channel would likely migrate within the overall flood plain). Exceptions to this trend exist in Reaches 39 and 42, since these channels have been artificially hardened resulting in a score of 'D'.

"Hydrologic Connectivity" (measuring the entrenchment of the channel) also varied significantly. The reaches that were artificially hardened (e.g., Reaches 39 and 42) received a score of 'D', while the level of entrenchment varied almost randomly within the larger channels.

5.2.3 Physical Structure Attribute

The "Structural Patch Richness" and "Topographic Complexity" metrics that comprise this attribute generally received scores of 'C' or 'D'. This is a direct result of the managed hydrology within these systems. Structural patches that were commonly observed in the various AAs include presence of cobble or boulders, debris jams, channel bars, and planar streambeds. Only a few of the AAs (all located within Reach 40b) had enough of these patches to receive a score of 'C'; generally a score 'D' was given to the various AAs. Similarly, scores for topographic complexity were very uniform as most AAs had a bank consisting of a single bench. No benches were observed in Reaches 39 and 42 since the banks in these areas have been artificially hardened; as such, these areas each received a 'D' score.

5.2.4 Biotic Structure Attribute

Generally, the scores for this attribute did not vary widely among the various reaches; variations that were observed are due to the supply of water that is available to the different channels and the degree of vegetation management that occurs. Most AAs received high scores of either 'A' or 'B' for the "Number of Plant Layers" sub-metric as three or four plant layers were generally present. However, this sub-metric can be deceptive as a plant layer only needs to occur within five percent of the AA to be counted. Though three or four plant layers were generally observed, many of the reaches had poor native plant coverage overall. This is illustrated by the poor scores (either 'C' or 'D' in almost all of the AAs) for the "Vertical Biotic Structure" metric, which assesses the degree of overlap between the various plant layers.

The "Number of Co-dominant Species" sub-metric also generally received low scores (either a 'C' or 'D') as none of the AAs utilized had more than seven co-dominant species. The "Percent of Invasive Species" sub-metric received somewhat higher scores, though they varied from 'A' to 'C'. This variation is due, not so much from the number of invasive species that were observed (no more than two invasive species were observed within any of the AAs), but instead due to the ratio of native to non-native co-dominant species. In other words, AAs that had more native co-dominant species received a higher score for this sub-metric though the number of invasive species did not vary significantly among the reaches.

The "Horizontal Interspersion" metric (also referred to as the "Plant Zonation" metric) received low scores, either 'C' or 'D', as plant zonation was fairly uniform in each of the AAs. This is presumably a direct result of ongoing vegetation management in these reaches.

It is worth noting that flood-control channel maintenance activities would be expected to only have an effect on the "Biotic Structure" Attribute. Trimming or removal of vegetation would be expected to reduce scores for the "Vertical Biotic Structure" and "Horizontal Interspersion" metrics, though these received low scores during the CRAM evaluation. Though vegetation management would also affect the amount of vegetation in these reaches, it is unclear if the overall scores for the three plant community sub-metrics ("Number of Plant Layers," "Number of Co-dominant Species," "Percent Invasive Species") would be lowered as the thresholds for plants to be included in these categories is rather low (a plant layer is counted if it occurs on at least five percent of the AA; a species is considered co-dominant if it comprises ten percent of that plant layer).

5.2.5 Stressors

Several stressors are associated with each of the reaches in this study. A summary of these stressors is provided below in Table 14. The most common stressors include the presence of development in the general vicinity of the reaches (both residential and industrial), unnatural inflows, point source discharges (storm water outlets into the channels), and the location of the reaches in engineered channels. Other stressors are associated with the maintenance activities in the reaches, such as vegetation management, removal of woody debris, and treatment of non-native plants.

TABLE 14
SUMMARY OF STRESSORS ASSOCIATED WITH EACH REACH

				Reaches							
Stressors	39	40	41	42	43	44	98				
Buffer and Landscape Context Attrib	bute	<u> </u>		<u> </u>		<u> </u>	<u> </u>				
urban residential			х	Х	х	х	Х				
industrial/commercial	х	Х	х	Х	Х	Х					
dams/flow disruption		х			х	х					
orchards/nurseries		х									
ranching		х									
sports fields/parks					х						
passive recreation	х	х									
Hydrology Attribute			•	•		•					
point source discharge		х	х		х	х					
non-point source discharge							Х				
unnatural inflows		х	х		х	х					
drop structures		х			х	х					
engineered channel	х	х		Х	х	х	Х				
actively managed hydrology		Х				Х					
Physical Structure Attribute											
vegetation management	х	х	х	X	х	х	Х				
trash		Х									
Biotic Structure Attribute		· · ·				-					
removal of woody debris	х	Х	х	X	х	х	Х				
treatment of non-native plants	х	Х	Х	Х	Х	Х	Х				

6.0 **RECOMMENDATIONS**

In order to provide the LACFCD with recommendations for allowing additional vegetation in those SBC reaches identified by the hydraulic analysis as having sufficient flood-control capacity to allow such vegetation, BonTerra Psomas developed biological value rankings for all nine SBC reaches. The biological value rankings are a synthesis of results from all biological surveys conducted for this Report, including the CRAM analysis. The results are presented below in Tables 15 and 16.

TABLE 15
SUMMARY OF BIOLOGICAL VALUES

Reach Number	Native Vegetation Types ^a	Special Status Plants	Special Status Wildlife ^b	Summer (Breeding) Birds ^c	Transects - Native Vegetation ^d	CRAM Results ^e	Final Score
39	1.0	ı	1.5	1.5	-	0.5	4.5
40a	1.0	-	-	-	0.5	1.0	2.5
40b	1.0	-	1.0	0.5	-	1.0	3.5
41	1.0	-	-	0.5	-	1.0	2.5
42	1.0	-	-	-	-	0.5	1.5
43a	1.0	-	1.0	1.5	0.5	1.0	5.0
43b	1.0	-	0.5	1.5	-	1.0	4.0
44	1.0	-	-	1.5	-	1.0	3.5
98	1.0	-	-	0.5	-	0.5	2.0

- ^a A score of 1 was assigned if a native vegetation type was present in the reach; score was reduced by one-half if the native vegetation type was identified as disturbed (see Table 2).
- A score of 1 was assigned if a Threatened or Endangered species has occupied the reach during focused surveys (see Table 4); if a reach has potential for a Threatened and Endangered species from another taxonomic group, such as Reach 39 that has potential for the Santa Ana sucker in addition to two species of birds (southwestern willow flycatcher and least Bell's vireo), an additional half-point was assigned to this column score. Note that the score for Reach 43b was reduced to a half-point since least Bell's vireo breeding has not yet been documented for this channel reach.
- A score of 1 was assigned to this column if a California Bird Species of Special Concern was located in the reach during the summer breeding bird surveys (see Table 5); an additional half-point was assigned to this column score if one or more species on the Los Angeles County Bird Watchlist was present during the summer breeding bird surveys (see Table 5).
- d A score of 1 was assigned if the pre-clearing transects produced greater than 50% native vegetation on average for the reach; a half-point was assigned to this column score if the native vegetation averaged more than 25% but less than 50% for the reach.
- ^e A score of 1 was assigned to the six reaches with highest CRAM scores (greater than 50); a score of one-half was assigned to the three reaches with the lowest CRAM scores (less than 50).

TABLE 16
BIOLOGICAL VALUE SCORES RANKED HIGH TO LOW

Reach Number	Native Vegetation Types	Special Status Plants	Special Status Wildlife	Summer (Breeding) Birds	Transects Native Vegetation	CRAM Results	Final Score ^a
43a	1.0	-	1.0	1.5	0.5	1.0	5.0
39	1.0	ı	1.5	1.5	-	0.5	4.5
43b	1.0	-	0.5	1.5	-	1.0	4.0
40b	1.0	-	1.0	0.5	-	1.0	3.5
44	1.0	ı	ı	1.5	-	1.0	3.5
40a	1.0	-	-	-	0.5	1.0	2.5
41	1.0	-	-	0.5	-	1.0	2.5
98	1.0	-	-	1.5	-	0.5	2.0
42	1.0	-	-	-	-	0.5	1.5

Final scores of equal value were sorted from high to low based on their final CRAM score (see Table 14). For example, Reaches 2 and 96 have equal biological value scores of 5, but Reach 2 was ranked higher than Reach 5 as it had a final CRAM score of 60.9 compared to 52.8 for Reach 96.

Except for Reach 39, Table 16 shows a correlation between higher CRAM scores and higher Biological Value scores. Unlike the other SBC reaches in this study, Reach 39 is a side outlet situated within a larger flood control channel³ that supports similar vegetation types. As a result, the combined areas provide suitable habitat for ecological specialists such as the least Bell's vireo, which provides more biological value to Reach 39 even though it scored poorly with CRAM.

As noted in the Hydraulic Analysis Technical Assessment Report prepared by the LACFCD, SBC reaches 39, 40a, 40b, 42, and 98 were found to lack sufficient hydraulic capacity to support additional vegetation. No recommendations for additional vegetation were therefore made for these five SBC reaches. The LACFCD requested that BonTerra Psomas develop recommendations for the remaining four SBC reaches (41, 43a, 43b, and 44). The recommendations for additional vegetation in these SBC Reaches, following review by LACFCD channel maintenance personnel, are provided in paragraph form below. Additionally, these recommendations are provided in conjunction with the vegetation map for each SBC reach in Exhibit 1 below. Note that reaches are presented in sequential order.

Reach 41, Walnut Creek. Allow 15 willow saplings to mature on left edge of low-flow channel, within the 1.6-acre additional vegetation area. This additional vegetation area is located from UTM coordinates (NAD 83) 11N 408563 mE, 3769493 mN (upstream limit) to 11N 408183 mE, 3769424 mN (downstream limit). All additional vegetation recommended for this channel reach will be subject to maintenance practices allowed under existing permits (e.g. the "lollipopping" of individual trees, and the removal of invasive species) (See Exhibit 1a).

Reach 43a, San Gabriel River (Upper). Allow willow riparian forest vegetation to mature within the low-lying, 0.45-acre additional vegetation area. This additional vegetation area is located from UTM coordinates (NAD 83) 11N 402561 mE, 3764805 mN (upstream limit) to 11N 402530 mN, 3764770 mE (downstream limit). All additional vegetation recommended for this channel reach will be subject to maintenance practices allowed under existing permits (e.g. the "lollipopping" of individual trees, and the removal of invasive species) (See Exhibit 1b).

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Except for Beatty Channel Outlet (Reach 39), the U.S. Army Corps of Engineers manages the San Gabriel River flood control channel at this location.

Reach 43b, San Gabriel River (Lower). Allow 20 willow saplings to mature on left edge of low flow channel, within the 1-acre additional vegetation area. This is intended to facilitate connectivity between adjacent willow riparian forest habitats. This additional vegetation area is located from UTM coordinates (NAD 83) 11N 401657 mE, 3763894 mN (upstream limit) to 11N 401406 mN, 3763543 mN (downstream limit). All additional vegetation recommended for this channel reach will be subject to maintenance practices allowed under existing permits (e.g. the "lollipopping" of individual trees, and the removal of invasive species) (See Exhibit 1c).

Reach 44, San Gabriel River – Rubber Dams (Upper). Allow 50 willow saplings to mature on left edge of low-flow channel between Rubber Dam 3 and Rubber Dam 4, within the 0.8-acre additional vegetation area, but not within 15ft of the toe of the levee. This additional vegetation area is located from UTM coordinates (NAD 83) 11N 399930 mE, 3759912 mN (upstream limit) to 11N 399571 mE, 3759425 mN (downstream limit). All additional vegetation recommended for this channel reach will be subject to maintenance practices allowed under existing permits (e.g. the "lollipopping" of individual trees, and the removal of invasive species) (See Exhibit 1d).

Reach 44, San Gabriel River – Rubber Dams (Middle). Allow 35 willow saplings to mature on left edge of low-flow channel between Rubber Dam 5 and Telegraph Road, within the 1.9-acre additional vegetation area, but not within 15ft of the toe of the levee. This additional vegetation area is located from UTM coordinates (NAD 83) 11N 399229 mE, 3757589 mN (upstream limit) to 11N 398942 mE, 3757213 mN (downstream limit). All additional vegetation recommended for this channel reach will be subject to maintenance practices allowed under existing permits (e.g. the "lollipopping" of individual trees, and the removal of invasive species) (See Exhibit 1e).

Reach 44, San Gabriel River – Rubber Dams (Lower). Allow 100 willow saplings to mature on left edge of low-flow channel between I-5 Freeway and Florence Avenue, within the two additional vegetation areas (1.8-acres total), but not within 15ft of the toe of the levee. The northernmost additional vegetation area is located from UTM coordinates (NAD 83) 11N 398464 mE, 3756469 mN (upstream limit) to 11N 398460 mE, 3756385 mN (downstream limit). The southernmost additional vegetation area is located from UTM coordinates (NAD 83) 11N 398450 mE, 3756323 mN (upstream limit) to 11N 398328 mE, 3755953 mN (downstream limit). All additional vegetation recommended for this channel reach will be subject to maintenance practices allowed under existing permits (e.g. the "lollipopping" of individual trees, and the removal of invasive species) (See Exhibit 1f).

7.0 REFERENCES

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⁴ Although the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW) effective January 1, 2013, "CDFG" is still used throughout this document for all documents published or database searches completed before January 1, 2013.

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